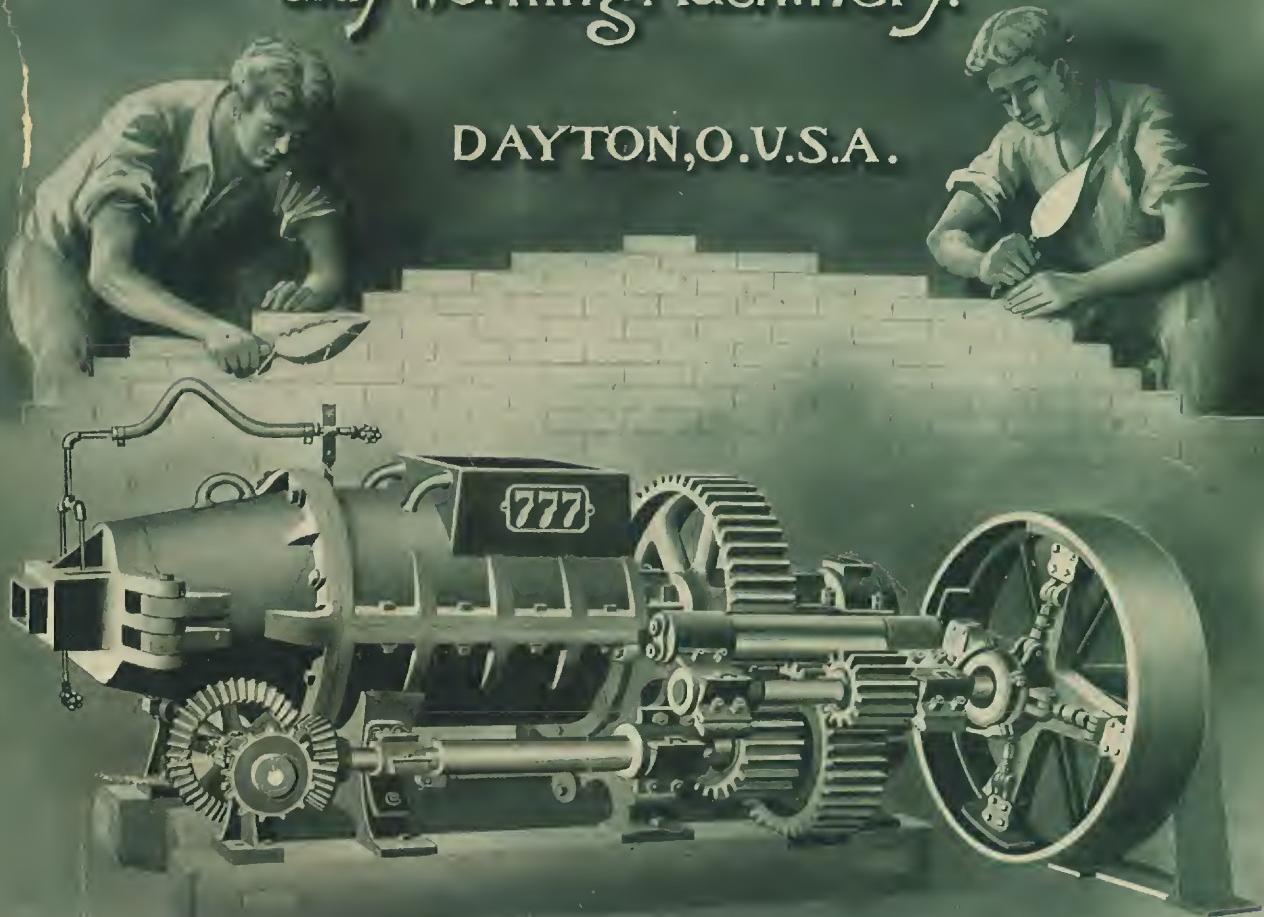
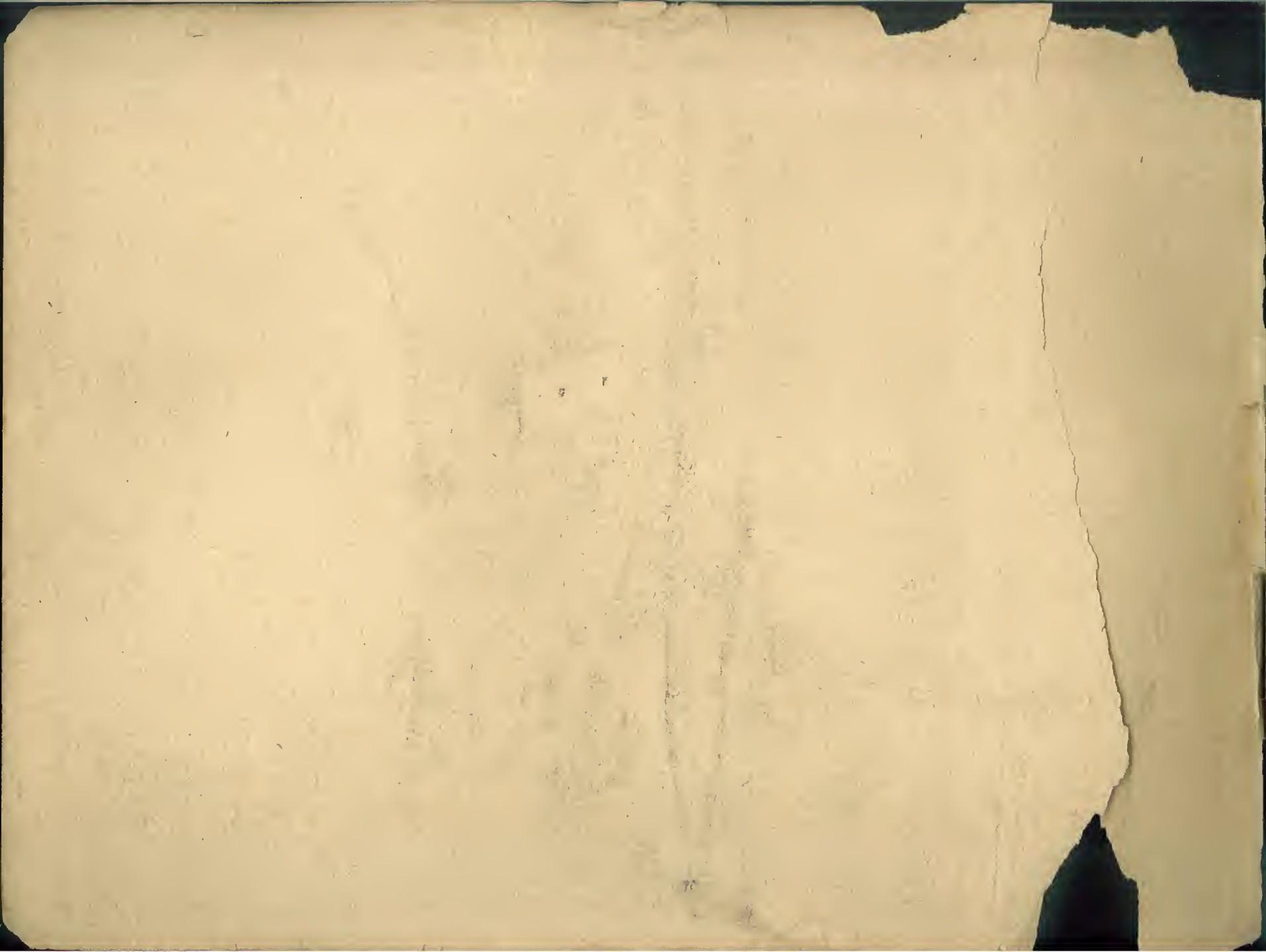


THE C. W. RAYMOND CO.

Clay Working Machinery.

DAYTON, O. U. S. A.





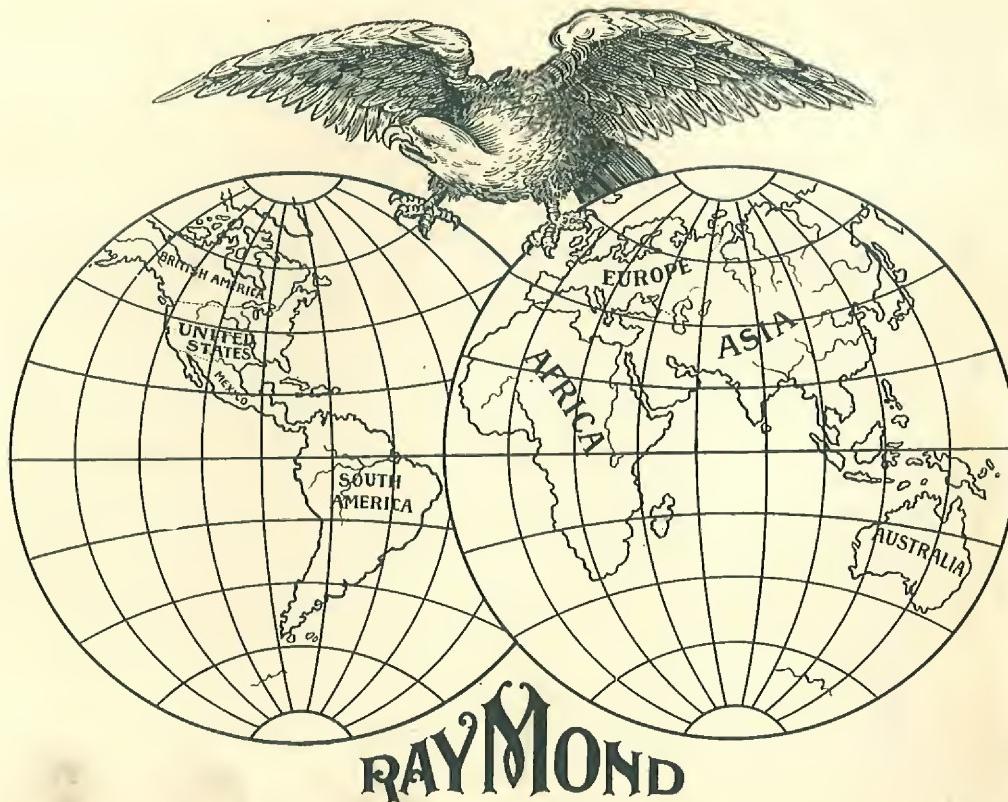
Clay-Working Machinery and Brick-Making Appliances



Manufactured by
THE C. W. RAYMOND CO.
DAYTON, OHIO, U. S. A.



"WE CIRCLE THE GLOBE."



RAYMOND BRICK MACHINERY is used throughout the world, and is the standard by which all other kinds are judged. Place your finger on the map and you are almost sure to place it upon a Raymond Brick Machine. This wonderful record has not been achieved without merit. It produces not only the greatest quantity of bricks, but those of the highest quality as well. Get Raymond Brick Machinery and you get the best.

THE C. W. RAYMOND CO.,
Dayton, Ohio, U. S. A.

IMPORTANT

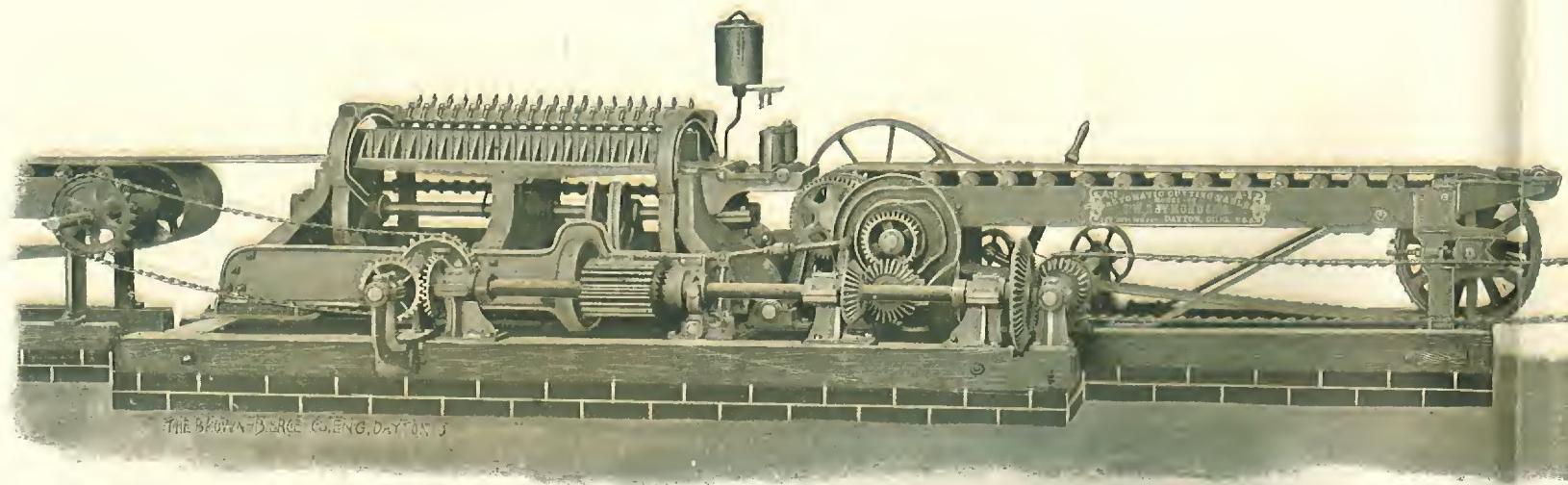


Certain of our competitors, for the purpose of bolstering up their waning reputation, have circulated a report that a combination exists between them and ourselves.

This notice is sent out for the purpose of informing the trade that all such representations are false, and have no foundation whatever. We are not in combination with any firm, nor do we have any intention of entering into one.

Respectfully,

The C. W. Raymond Co.



The A-1 Automatic Cutting Table

Capacity 75,000 to 100,000

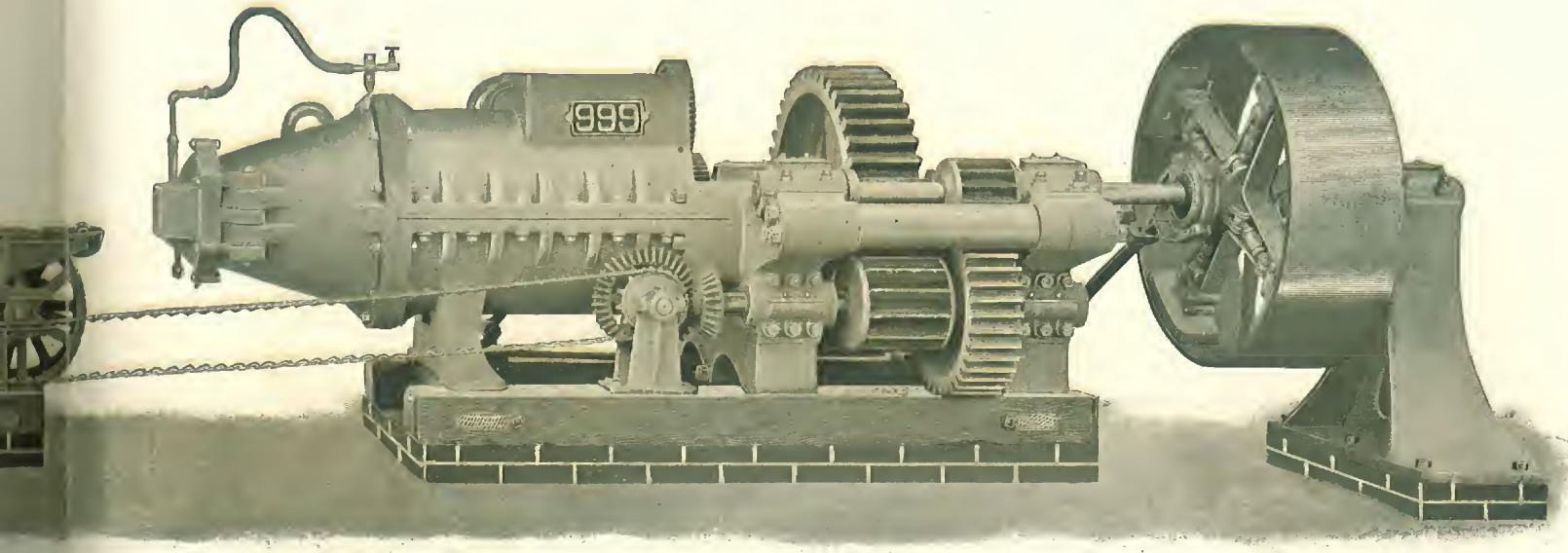
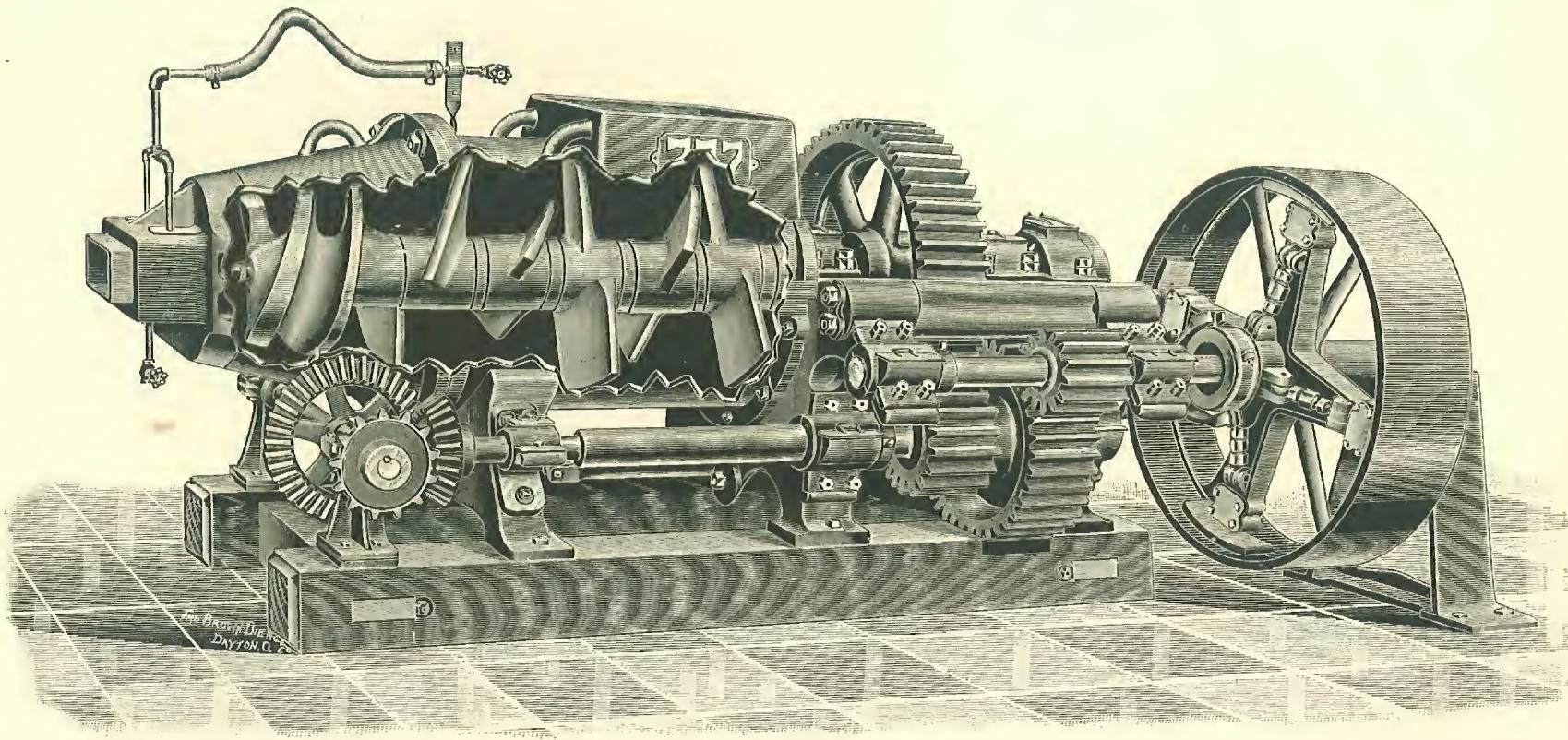


Table and “999” Brick Machine.
100,000 Bricks per Day.

THE C. W. RAYMOND CO.
DAYTON, OHIO, U. S. A.



INTERIOR CONSTRUCTION OF RAYMOND AUGER BRICK MACHINES.

CONSTRUCTION OF RAYMOND AUGER MACHINES.



THE C. W. RAYMOND CO.
DAYTON, OHIO, U. S. A.

THE Gear Frame consists of two heavy cast-iron bearing frames securely held together by clusters of steel tie bolts with accurately planed and fitted stretchers between. These bolts are so arranged that they receive the enormous strain both above and below the center line of pressure, thus distributing it evenly throughout the machine.

The Main Shaft is hexagon in shape forged from the best grade of homogeneous steel. The Driving and Intermediate Shafts are of cold-rolled steel of ample size to assure a large margin of safety under the most rigorous duty. The Bearings are long and lined with the best grade of babbitt metal. The alignment of every machine is perfect.

The Gears are cast from a special grade of gear iron and the pinions of crucible steel. They are designed on the same liberal proportions as the remainder of the machine and are always carefully adjusted to mesh properly.

The Thrust Bearing consists of two chilled plates with surfaces ground absolutely true between which runs an anti-friction plate of bronze metal. The entire bearing runs in an oil reservoir and with proper care will not heat or show undue wear.

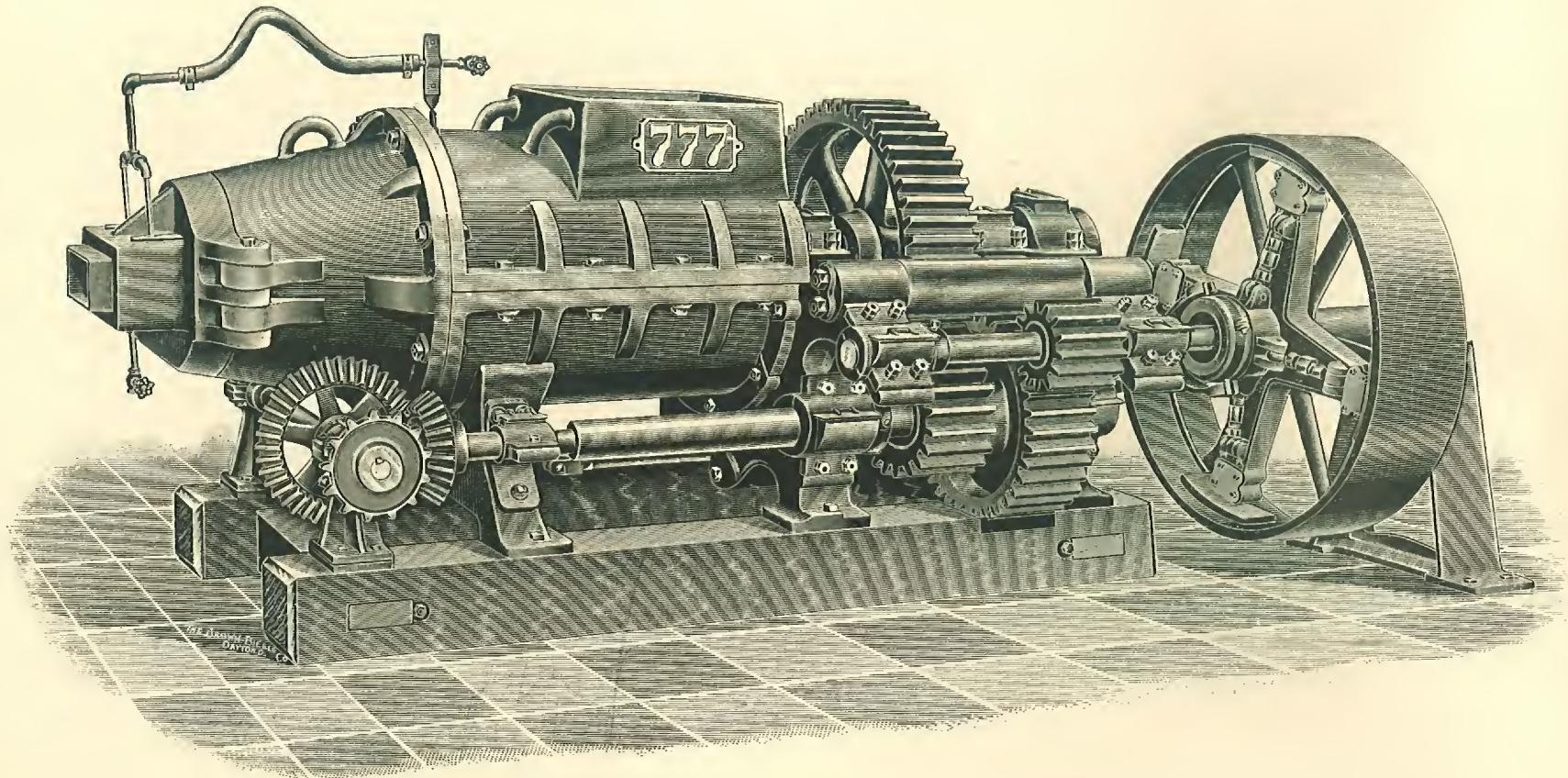
None but the highest grade of chilled iron enters into the construction of the Mixing Knives and Auger. We manufacture these in several designs with different degrees of lead in order that if any one does not prove right for working a certain clay another may be substituted, thus securing the internal arrangement to each machine best adapting it to that particular clay which it is to operate. By use of the Hexagon Main Shaft, the Knives and Auger may be changed with rapidity.

The Nozzle Extension to which the die is bolted is attached on one side by a hinge, and on the other by a safety bolt. In case any hard substance gets into the machine, that would otherwise cause a break, this Safety Bolt shears and relieves the strain.

The Die is formed of two parts: The Casing and the Liners. When necessary to change size of brick, only new liners are required. Arrangements are made for lubricating with oil, steam or water, and when required, a Dry Die is furnished.

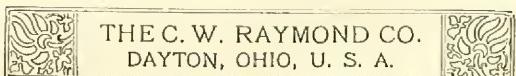
All machines are entirely self-contained, and are furnished with a Friction Clutch Pulley of improved pattern. They are used for the manufacture of an endless variety of clay products, and are made in several sizes, as shown on the following pages:

THE C. W. RAYMOND CO.
DAYTON, OHIO, U. S. A.



RAYMOND "777" BRICK MACHINE.

“777” BRICK MACHINE.

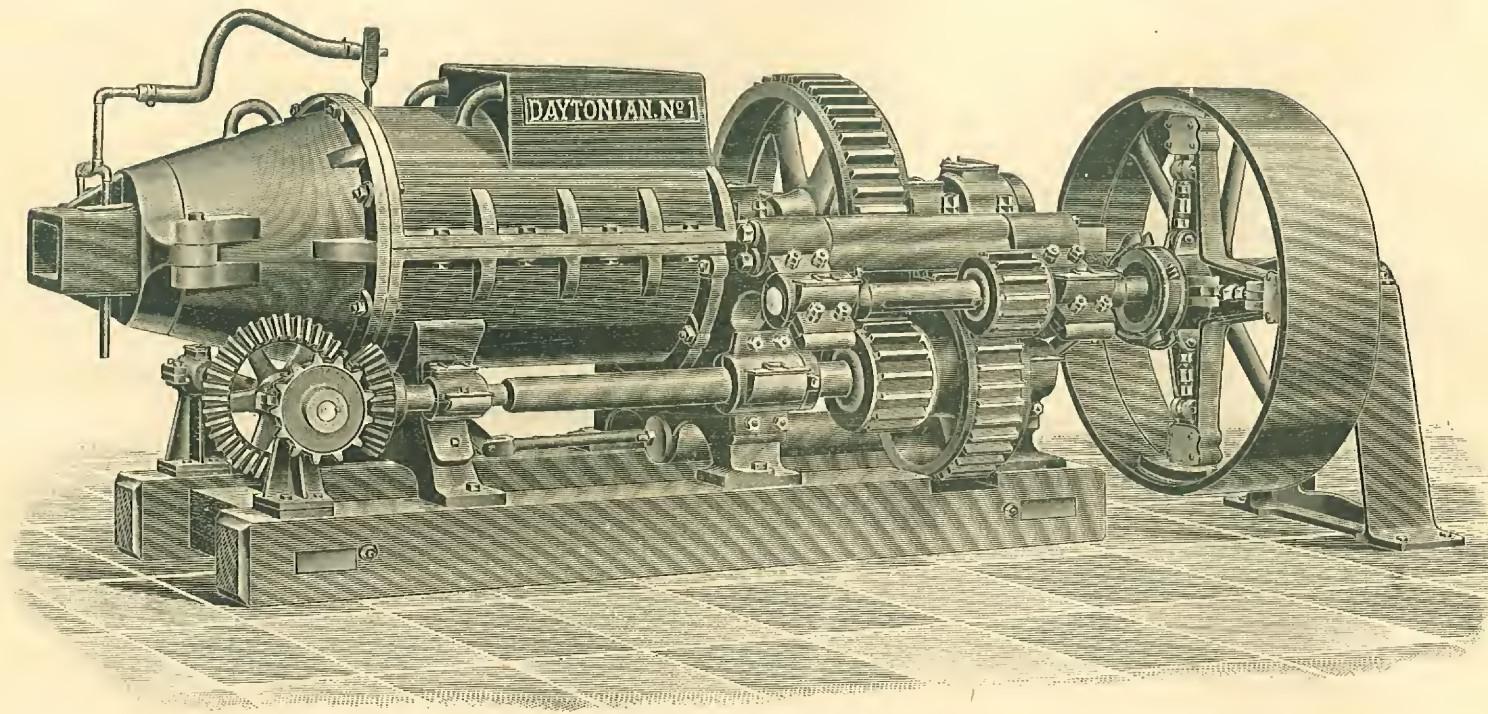


THE most universally popular of all Brick Machines. It is adapted to a large and varied range of work and has ample strength and capacity to meet the most exacting requirements of the average brick yard. For building brick, paving brick or fire

brick, it is the peer of anything known. We hazard the assertion that there is not a machine made of more general utility or which embodies the virtues of the “777”. The illustration shows the machine arranged to work with our Automatic Table.

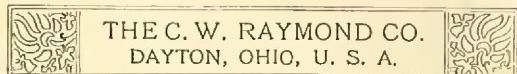
The Chamber is 24 inches diameter. The Main Shaft is of hexagon hammered steel, 5 inches diameter, with Bearings 14 inches and 16 inches long. This Shaft is fitted with six Double Pugging Knives, one Auger Wing and one Auger, 15 inches diameter. The Intermediate and Driving Shafts are cast steel $3\frac{1}{4}$ inches diameter with Bearings 11 inches long. The Main Gear is 34 inches diameter, 8-inch face. Both Pinions are of crucible cast steel, 8-inch face. Is self-contained. Is back-geared 11 to 1, and is furnished with four-arm Friction Clutch Pulley, 42 inches diameter by 12-inch face, which should run 250 revolutions per minute. When erected for operation, it occupies a space 11 feet 9 inches long, 5 feet 11 inches wide by 4 feet 1 inch high. Capacity from 4,500 to 6,000 American standard size bricks per hour. Estimated weight, 13,000 pounds.

THE C. W. RAYMOND CO.
DAYTON, OHIO, U. S. A.



RAYMOND No. 1 DAYTONIAN BRICK MACHINE.

No. 1 DAYTONIAN BRICK MACHINE.



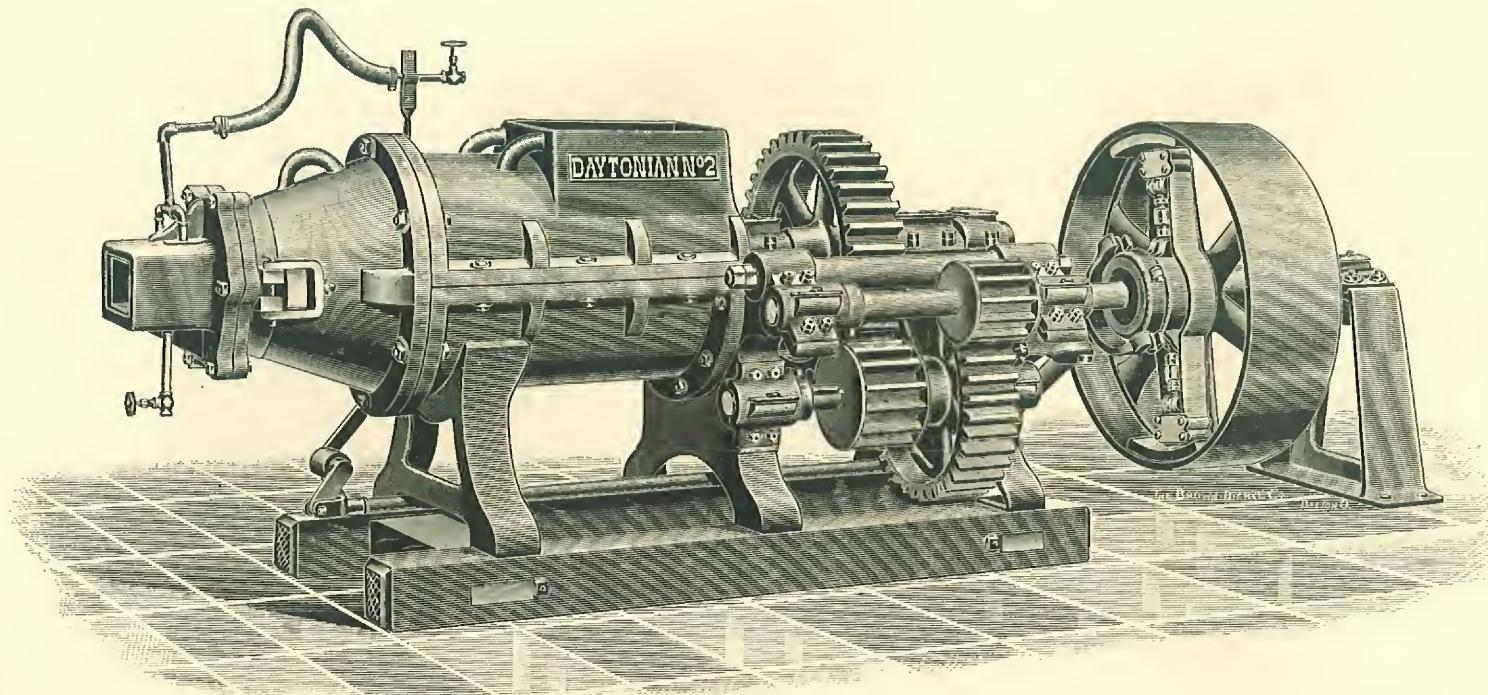
THE C. W. RAYMOND CO.
DAYTON, OHIO, U. S. A.

A MACHINE possessing many commendable qualifications and that is liked by all who use it. All varieties of stiff plastic clay products may be successfully and economically made upon it. It can be arranged to work with any of our Hand or Automatic Cutting Tables.

The Chamber is 24 inches diameter. The Main Shaft is $4\frac{1}{2}$ inches diameter, of hammered steel, with Bearings 13 inches and 15 inches long. This Shaft is fitted with six Pugging Knives, Auger Wing and Auger, 14 inches at small end. The Intermediate and Driving Shafts are cast steel, 3 inches diameter, with Bearings 11 inches long. The Main Gears are 32 inches diameter, 6-inch face. The Pinions are cast steel, 6-inch face. All Gears and Pinions are shrouded and faces turned. It is back-gearred 11 to 1. Is self contained and fitted with four-arm Friction Clutch Pulley, 42 inches diameter by 12-inch face, which should run from 225 to 250 revolutions per minute.

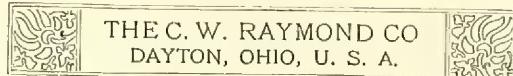
When erected for operation, it occupies a space 11 feet 9 inches long, 5 feet 11 inches wide, by 4 feet 1 inch high. Capacity from 3,000 to 4,500 American standard size bricks per hour. Estimated weight, 9,500 pounds.

THE C. W. RAYMOND CO.
DAYTON, OHIO, U. S. A.



RAYMOND No. 2 DAYTONIAN BRICK MACHINE.

No. 2 DAYTONIAN BRICK MACHINE.

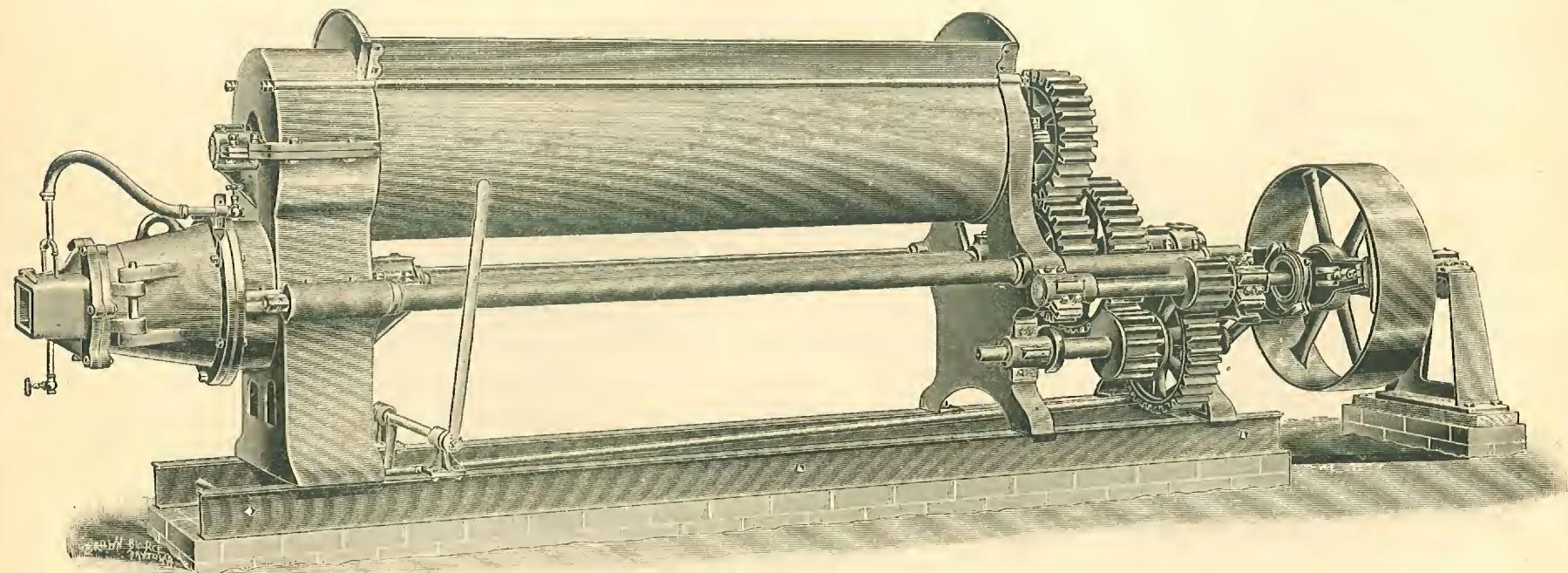


THE C. W. RAYMOND CO.
DAYTON, OHIO, U. S. A.

FOR brick yards of moderate capacity this machine has no equal. It is strong and serviceable and will easily withstand the rigorous duty to which it is subjected. It has proved a universal favorite, as hundreds of its users will gladly attest. It is operated in connection with any of our Hand Cutting Tables.

The Chamber is 22 inches diameter. The Main Shaft is hexagon hammered steel with bearings 11 inches and 13 inches long, and is fitted with our improved anti-friction thrust bearing. On the Main Shaft is fitted six Double Pugging Knives and Auger 14 inches diameter at small end, all of which are thoroughly chilled. The Intermediate Shafts are $2\frac{1}{2}$ inches in diameter with bearings 10 inches long. The Main Gear is 28 inches diameter, 6-inch face, and the Intermediate Gear is 21 inches diameter by 6-inch face. Both are made from the best quality of gray iron. The Pinions are of gray iron with 6-inch face and shrouded. Is entirely self-contained and furnished with Friction Clutch Pulley, 36 inches diameter by 10-inch face, which should run 250 revolutions per minute. When erected for operation, it occupies a space 9 feet 6 inches long, 4 feet 8 inches wide by 3 feet 10 inches high. Capacity, from 2,000 to 3,000 American standard size bricks per hour. Estimated weight, 7,000 pounds.

THE C. W. RAYMOND CO.
DAYTON, OHIO, U. S. A.



RAYMOND COMBINATION BRICK MACHINE AND PUG MILL.

COMBINATION MACHINES.



THE C. W. RAYMOND CO.
DAYTON, OHIO, U. S. A.

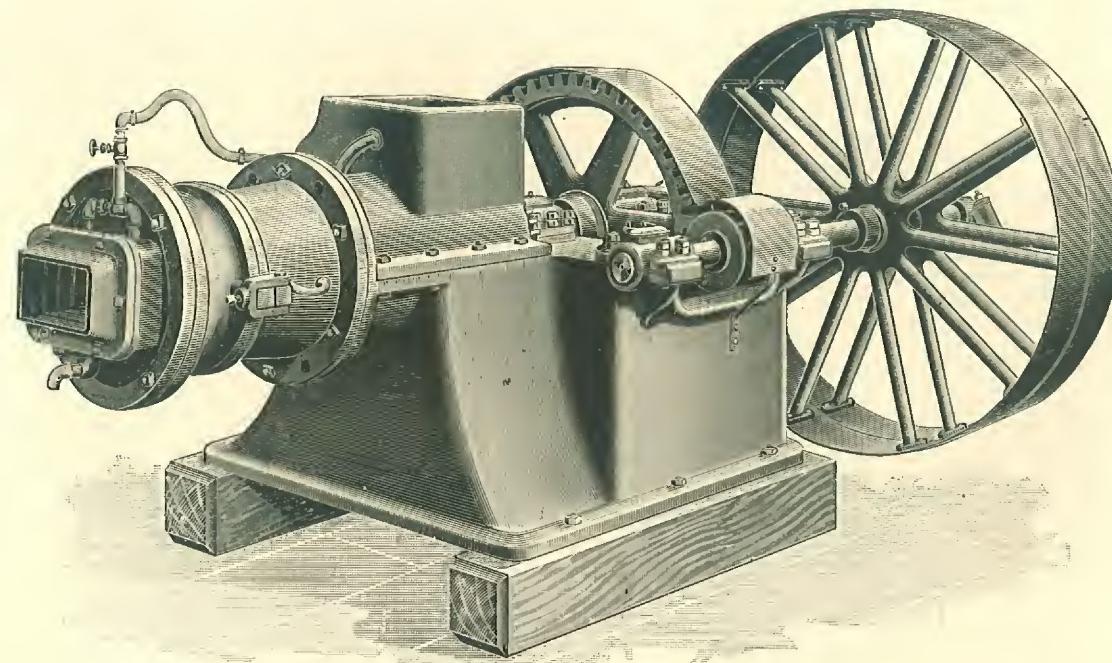
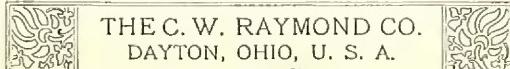
WE manufacture two sizes of this well-known and popular machine. They are both compound geared. Into their construction enters nothing but the best of material and most careful workmanship. They are no experiment, having now been on the market for nearly three years, a number of them being in steady daily operation. Those interested in this style of machine will do well to consider seriously and carefully the RAYMOND before placing their order elsewhere.

No. 1 COMBINATION BRICK MACHINE AND PUG MILL.

The Pug Mill Chamber is 10 feet long, 28 inches diameter. The Brick Machine Chamber is 24 inches diameter. The Main Shaft is of hexagon hammered steel, 5 inches diameter. The Main Shaft is fitted with three Double Pugging Knives, one Auger Wing and one Auger 15 inches diameter, and the Pug Mill Shaft is fitted with 36 chilled Pugging Blades with Split Hubs. The Intermediate and Driving Shafts are cast steel, 3 $\frac{1}{2}$ inches diameter, with Bearings 11 inches long. The Main Gear is 34 inches diameter, 8-inch face. Both Pinions are of crucible cast steel 8-inch face. It is backed geared 11 to 1, and is furnished with four-arm Friction Clutch Pulley, 42 inches diameter by 12-inch face, which should run at 250 revolutions per minute. When erected for operation, it occupies a space 20 feet long, 6 feet wide by 5 feet 8 inches high. Capacity from 3,000 to 4,000 American standard size bricks per hour. Estimated weight 16,000 pounds.

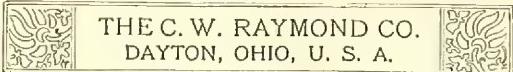
No. 2 COMBINATION BRICK MACHINE AND PUG MILL.

The Pug Mill Chamber is 9 feet long, 24 inches diameter. The Brick Machine Chamber is 20 inches diameter. The Main Shaft is of hexagon hammered steel 4 $\frac{1}{2}$ inches diameter, and the Pug Mill Shaft of hexagon hammered steel 4 inches diameter, and is fitted with 30 chilled Pugging Blades with Split Hubs. The Intermediate Shafts are 2 $\frac{5}{8}$ inches diameter with Bearings 10 inches long. The Main Gear is 28 inches diameter, 6-inch face, and the Intermediate Gear is 21 inches diameter by 6-inch face, are of the best quality of gray iron, 6-inch face and shrouded. It is driven by a Friction Clutch Pulley, 36 inches diameter by 10-inch face, which should run 225 revolutions per minute. When erected for operation it occupies a space 17 feet 5 inches long, 4 feet 8 inches wide by 5 feet 2 inches high. Capacity from 2,000 to 3,000 American standard size bricks per hour. Estimated weight, 12,000 pounds.



RAYMOND No. 3 BRICK MACHINE.

No. 3 BRICK MACHINE.

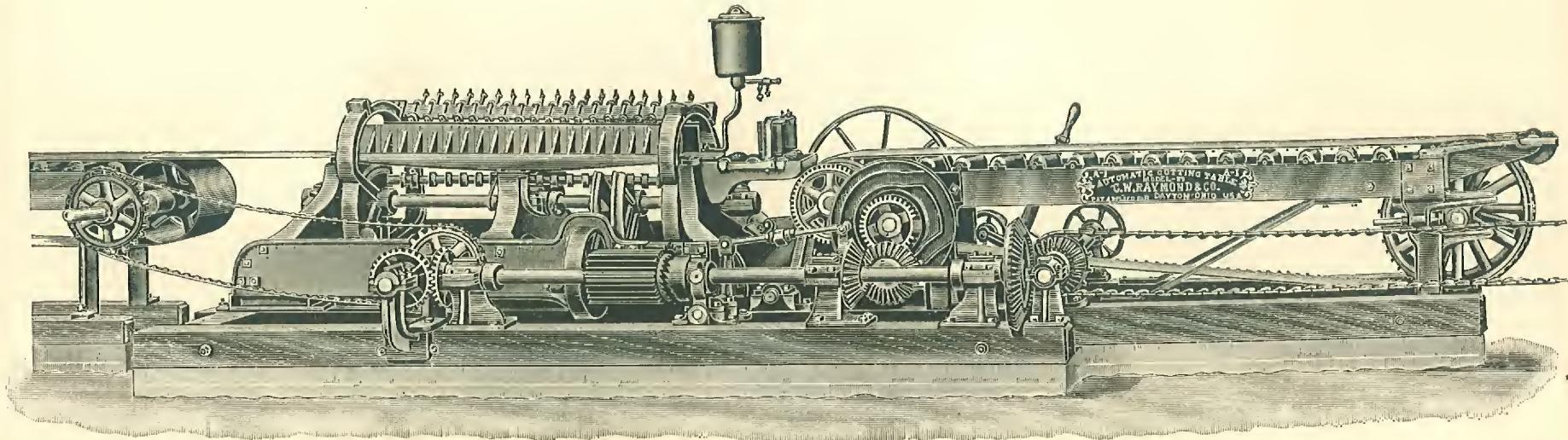


wanting a machine of small capacity will find it all that may be desired. It is adapted to working with any of our hand cutting tables.

Main Shaft is $3\frac{1}{2}$ inches diameter, of cold roll steel. Driving Shaft is $2\frac{1}{2}$ inches diameter, of cold roll steel. All Bearings are 8 inches long, in which only the best grade of babbitt is used. Main Gear is 32 inches diameter, 6-inch face. Chamber is 16 inches diameter, fitted with rotary force feed. Pulleys are tight and loose, 48 inches diameter by 8-inch face, and should run 200 revolutions per minute.

When erected for operation, this machine occupies a space 9 feet 10 inches long, 5 feet 6 inches wide by 4 feet 7 inches high. It will make from 1,000 to 2,000 American standard size bricks per hour, and tile up to 8 inches in diameter, in proportionate quantities. Estimated weight, 4,100 pounds.

THE CUTS on the preceding and following pages represent the No. 3 Daytonian Brick Machine; the former showing it arranged for side-cut brick and the latter arranged for tile and hollow ware. It is a first-class, well-built machine, and those

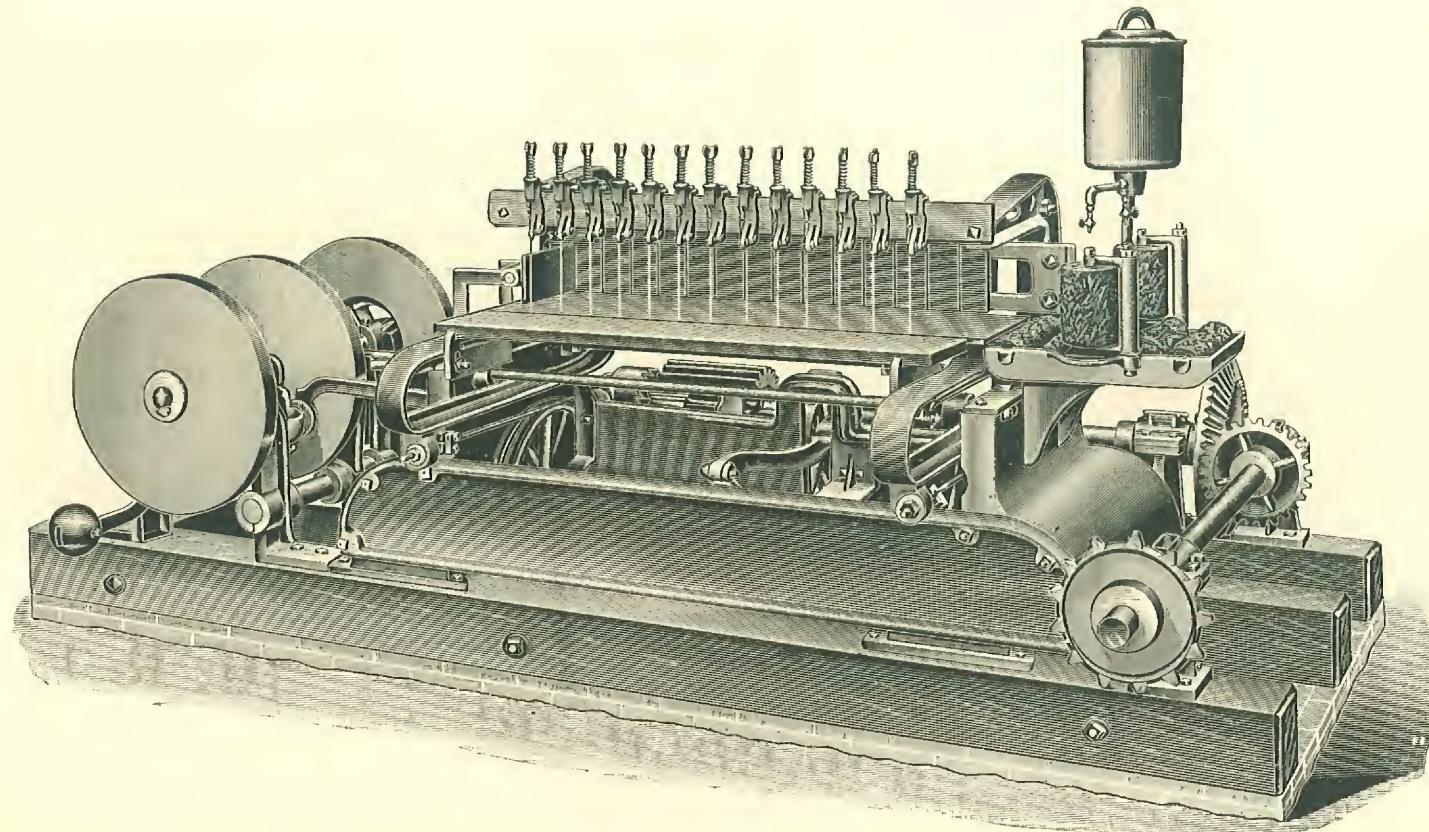


RAYMOND A-1 AUTOMATIC SIDE CUTTING TABLE.

LENGTH over all, without separating belt, 17 feet 10 inches. Width, 5 feet 6 inches. Height, 4 feet 2 inches. Driving Shaft is turned by sprocket wheel which varies in size according to machine from which it is operated, and should run at the rate of 60 revolutions per minute. Capacity, 5,000 to 9,000 American standard size bricks per hour. Separating belt is furnished any length ordered. Weight, without separating belt, 5,500 pounds.

A-2 AUTOMATIC SIDE CUTTING TABLE.

Length over all, without separating belt, 16 feet 6 inches. Width, 5 feet 6 inches. Height, 4 feet 2 inches. Driving Shaft is turned by sprocket wheel which varies in size according to machine from which it is operated, and should run at the rate of 60 revolutions per minute. Capacity 2,500 to 5,000 American standard size bricks per hour. Separating belt is furnished any length ordered. Weight, without separating belt, 4,200 pounds.



RAYMOND UNIQUE BOARD-DELIVERY AUTOMATIC SIDE CUTTING TABLE.

LENGTH over all, 9 feet. Width, 4 feet 8 inches. Height, 3 feet 8 inches. Driving Shaft is operated from the brick machine by a sprocket wheel, which varies in size according to speed of machine. This Table is also made with a down-cut movement similar to our hand down-cut board-delivery table at a small additional cost, when so ordered. The Driving Shaft should run at 40 revolutions per minute. Capacity, 2,000 to 4,000 American standard size bricks per hour. Weight, 3,100 pounds.

HAND CUTTING TABLES.



THE C. W. RAYMOND CO.
DAYTON, OHIO, U. S. A.



WE ARE the builders of a most perfect line of Hand Cutting Tables, which are illustrated and described on the several succeeding pages. Our recommendation for them, in which we take great pride, is the continually increasing demand, together with the good results which are reported from each and every one as it is placed in operation. This has been the case for so many years that it has demonstrated beyond all question their entire practicability and adaptability to the duty for which they are constructed.

The Triumph Side Cutting Table works rapidly, makes a perfectly square cut, and operates with remarkable ease. The Platen forms a guide for the column of clay and keeps it at all times in line with the machine. The Cutting Wires are stretched between two heavy wrought iron bars supported in a circular moving frame, operating on a two-inch shaft. It is self-reversing and cuts 10 to 12 brick at each operation. The Cut is made with a downward stroke of the lever as the table travels with the clay, the upward stroke returning it to position. The brick then pass on to the separating belt, where they are spaced for handling ready to place on cars or into a re-press.

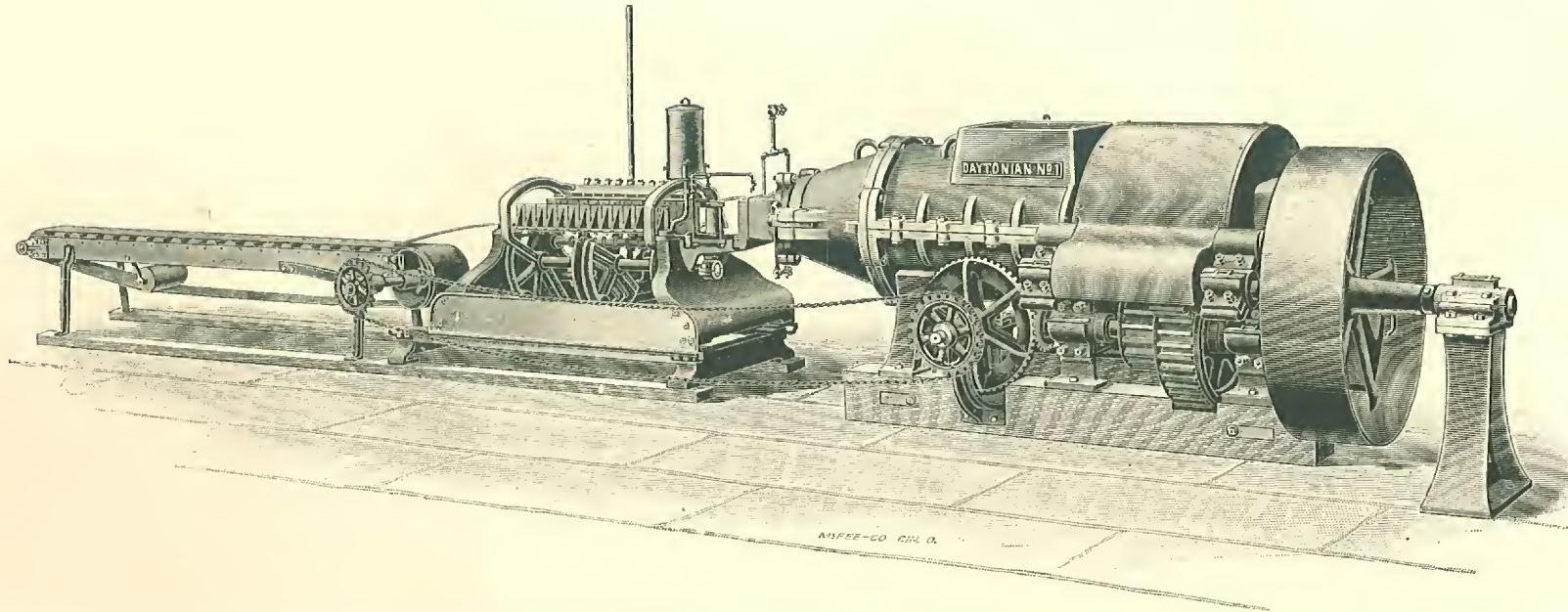
The Novelty Board-Delivery Cutting Table is run by a frictionless movement composed of pliable wire cable, running around a segment of a fluted wheel. This is the easiest-operating movement ever used on a machine of this kind and one that can always be kept tight.

The Down-Cut Table is operated by this same movement. By reason of the peculiar movement of the wires, it cuts the brick with the face edges absolutely square and true.

Another feature of our Tables, which might be well to note, is the arrangement for substituting new cutting wires for broken ones. By actual trial, new wires can be put on in three seconds. This is done by means of an adjustable hook at the top, which, when pulled down, releases the broken wire and allows a new one to be quickly substituted. When thrown back to position, the wire is put under tension and ready for operation. Other advantages of much importance appear in the construction of our tables.

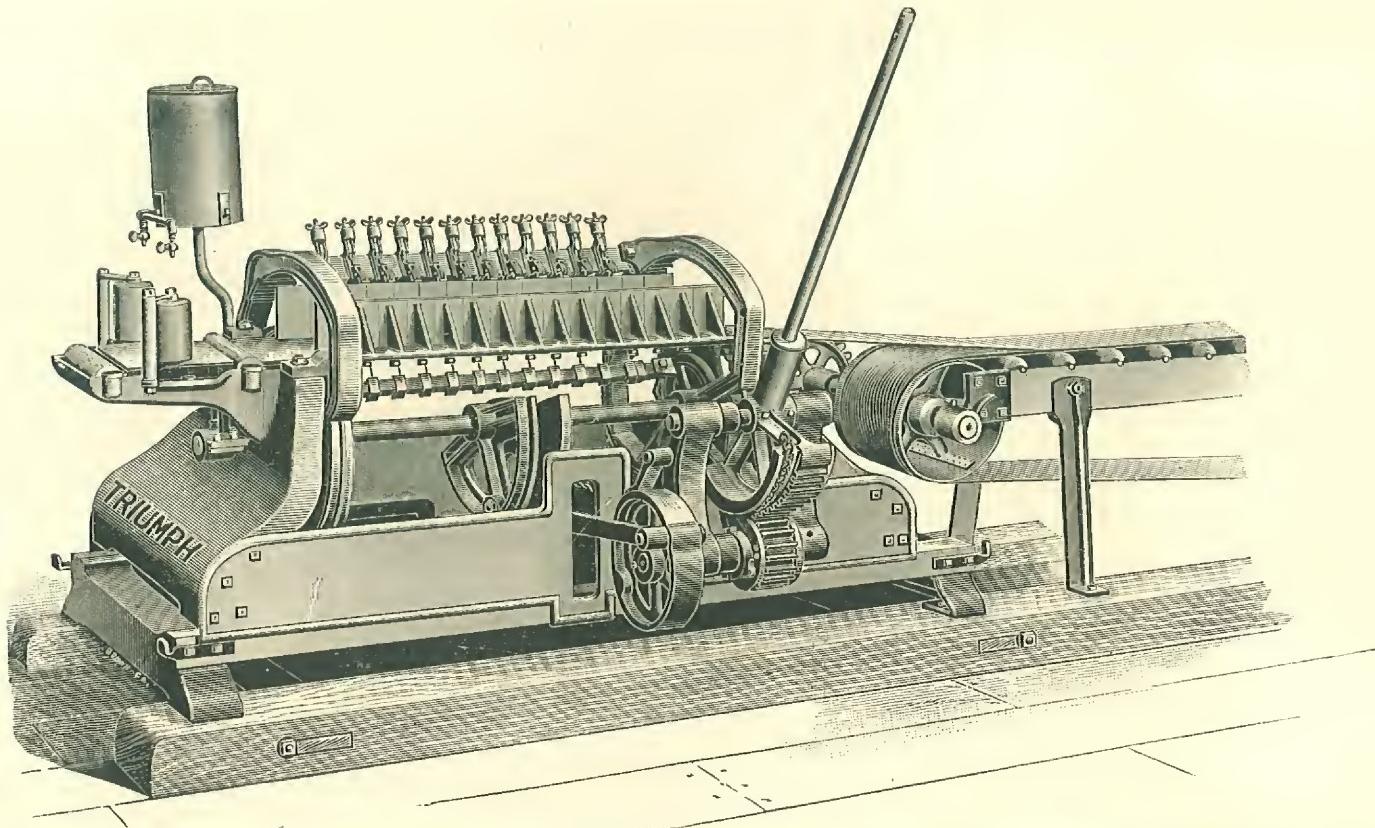


THE C. W. RAYMOND CO.
DAYTON, OHIO, U. S. A.



RAYMOND No. 1 DAYTONIAN BRICK MACHINE AND TRIUMPH CUTTING TABLE.

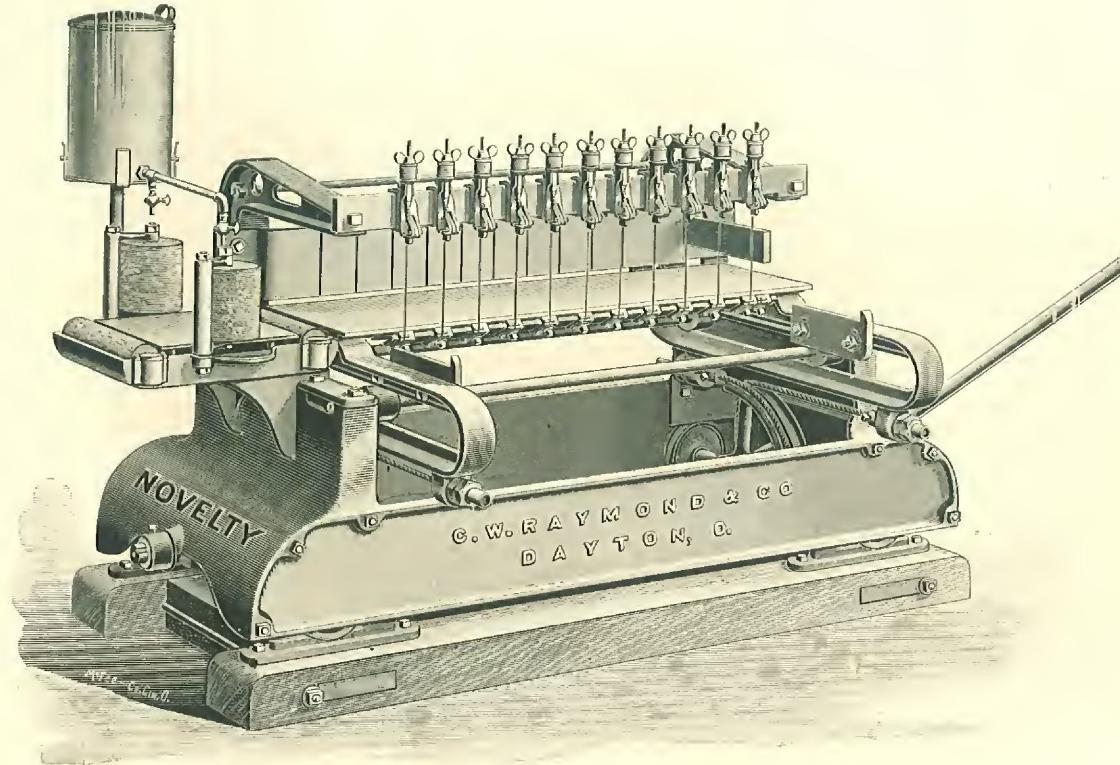
SHOWING No. 1 Brick Machine and Triumph Side-Cut Cutting Table, with separating belt. A practical combination of machine and table for plants of ordinary size. Capacity 3,000 to 4,000 American standard size bricks per hour. The brick can be easily handled from the separating belt to the feeding table of the Re-press.



RAYMOND TRIUMPH SIDE CUTTING TABLE WITH SEPARATING BELT FOR SIDE-CUT BRICK.

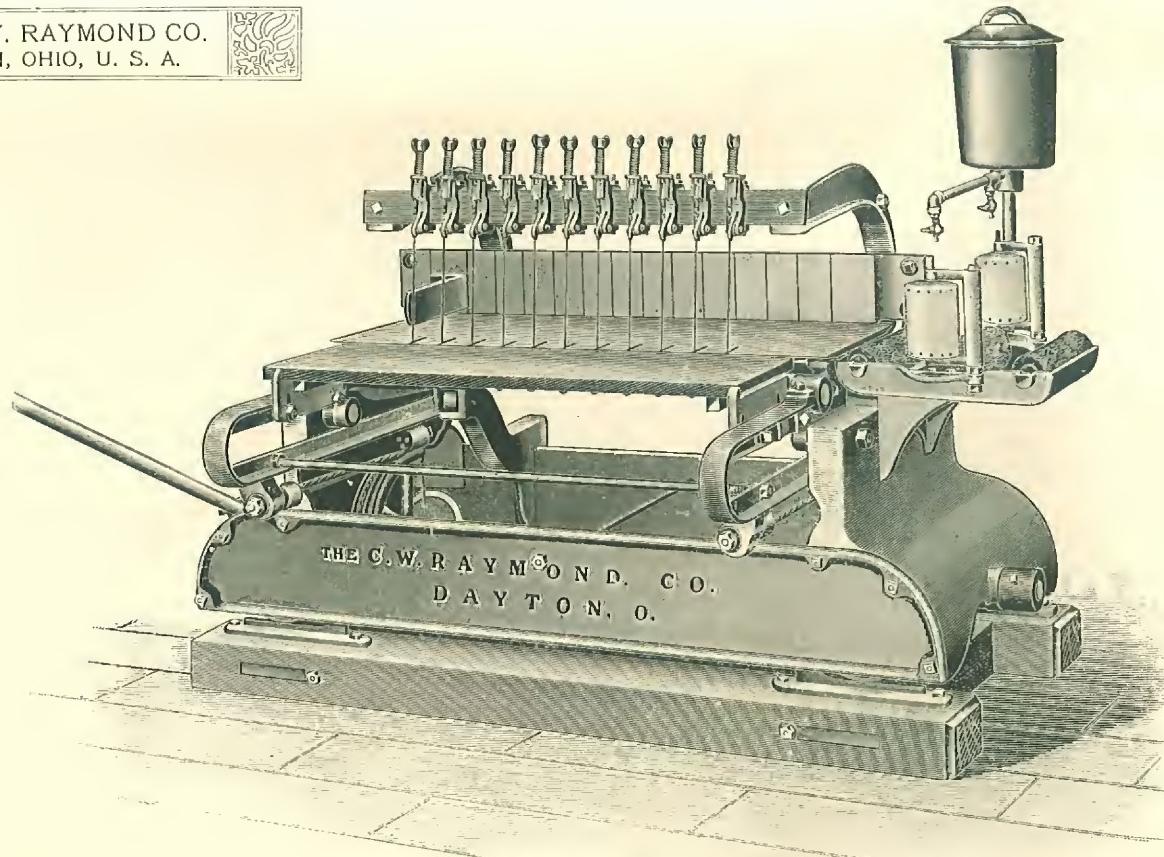
LENGTH over all, without separating belt, 6 feet 8 inches. Width, with lever upright, 4 feet. Width, with lever down, 7 feet 6 inches. It is furnished with a 10-foot separating belt unless otherwise ordered. This belt, however, can be made any length desired. Capacity, 2,000 to 3,000 American standard size bricks per hour. Estimated weight, 2,500 pounds.

THE C. W. RAYMOND CO.
DAYTON, OHIO, U. S. A.



RAYMOND NOVELTY BOARD-DELIVERY CUTTING TABLE.

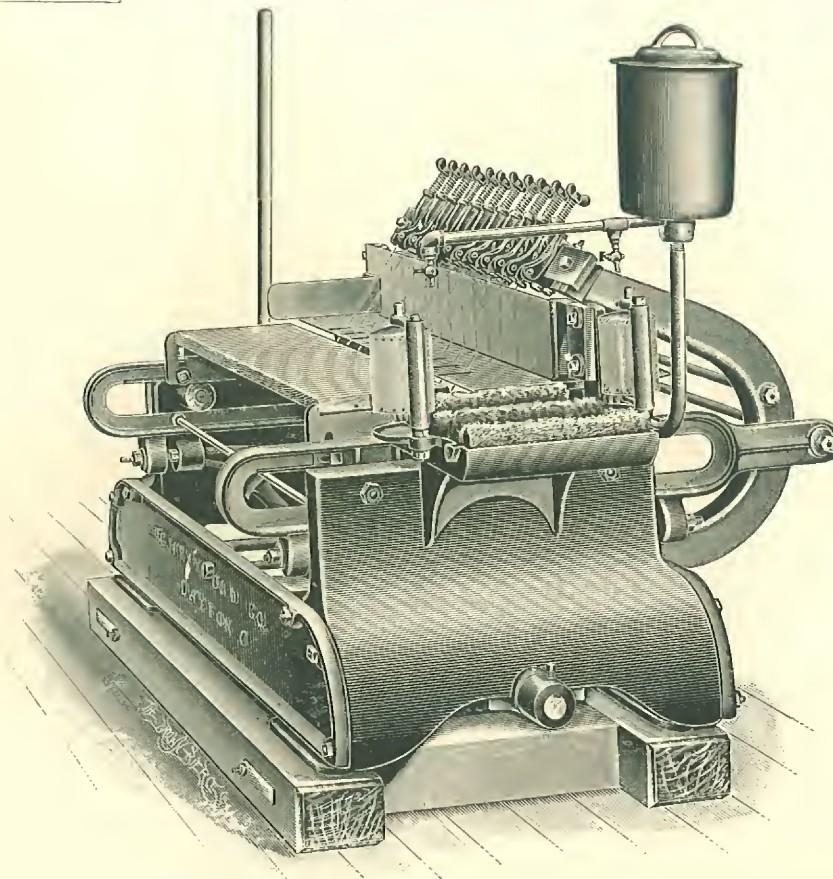
LENGTH, 6 feet. Width, 3 feet 8 inches. Width with lever down, 4 feet 9 inches. Height, 3 feet 8 inches. Capacity, 2,000 to 4,000 American standard size bricks per hour. Weight, 700 pounds.



RAYMOND DOWN-CUT BOARD-DELIVERY CUTTING TABLE.

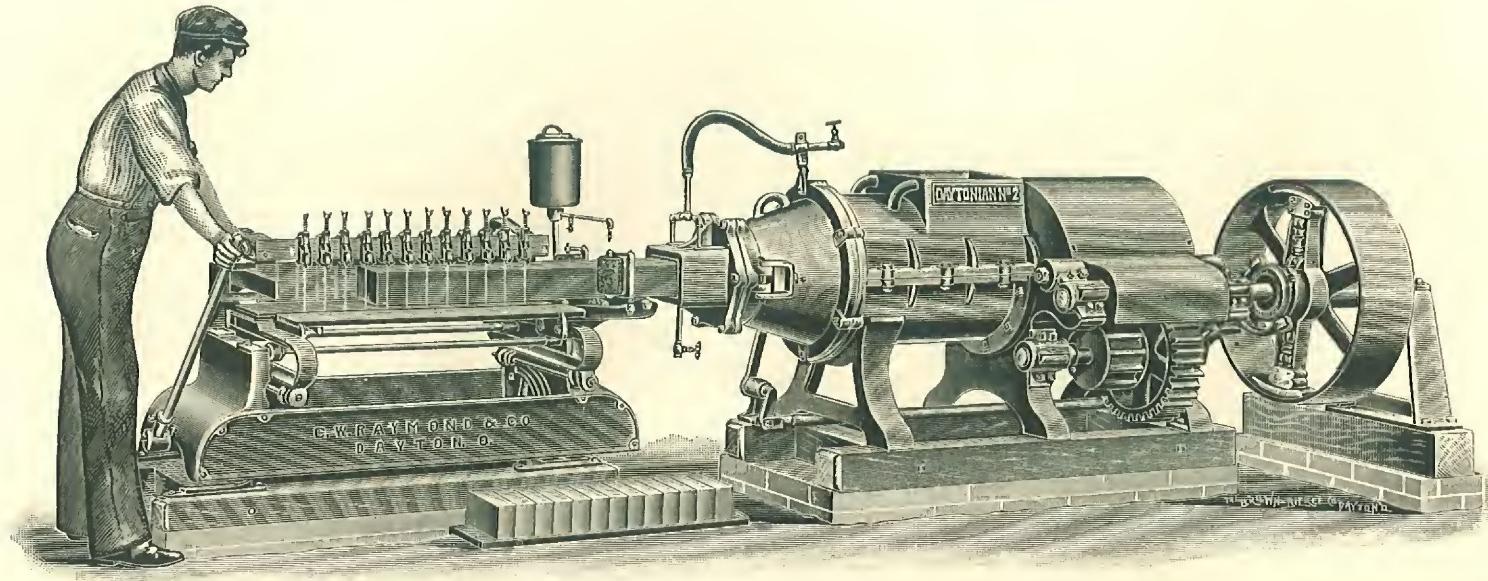
THIS table is constructed throughout at par with the remainder of our large line of machinery. Two views are given. The first one showing it at rest and the second showing the position of the wires when about half way through the column of clay.

The wires are suspended in an independent wire frame, which by means of rollers running in oblique tracks, gradually cause the frame to drop during the progress of the cut and increase the angle of the wires from an upright position to a little less than 45 degrees at the lowest point. By means of this mechanism a perfect down-cut shearing movement of the wires is obtained and the face edges of the brick are always cut perfectly smooth.



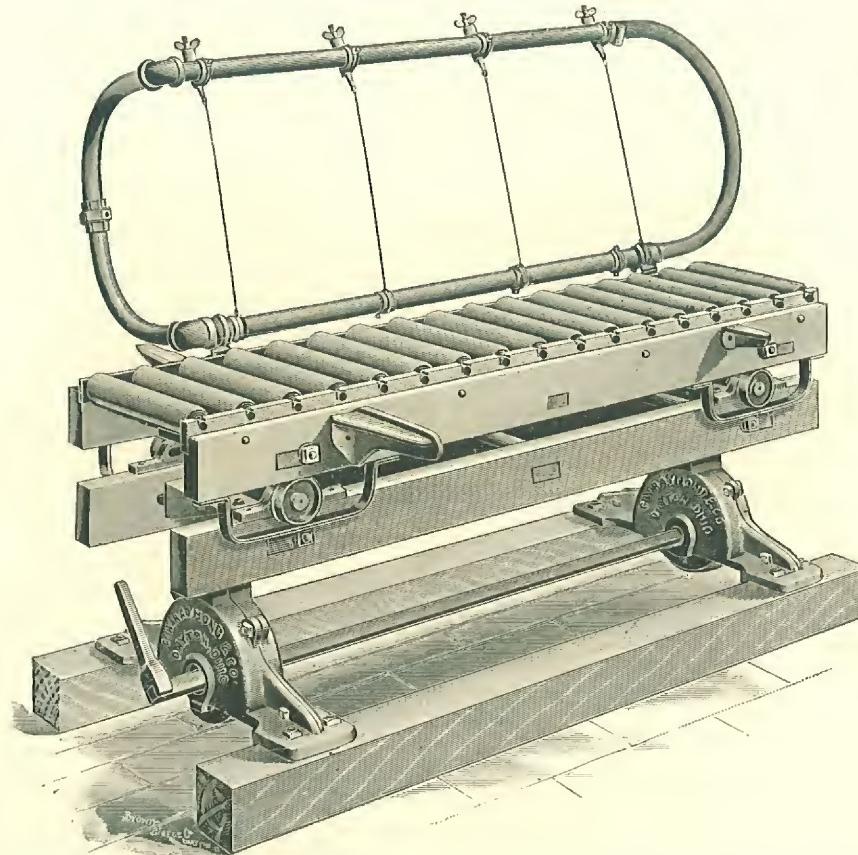
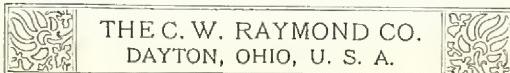
RAYMOND DOWN-CUT BOARD-DELIVERY TABLE FOR ROMAN BRICK (END VIEW).

We manufacture it in two sizes; the larger one shown in the above cut is intended for cutting Roman, Norman or Pompeian brick and will cut anything up to 14 inches long. It occupies a floor space about 5 feet by 3 feet 6 inches and weighs approximately 900 pounds. The Table on the previous page is intended for ordinary size brick and occupies a floor space about 4 feet 10 inches long by 3 feet 4 inches wide and weighs approximately 850 pounds.



RAYMOND No. 2 DAYTONIAN BRICK MACHINE AND NOVELTY BOARD-DELIVERY CUTTING TABLE.

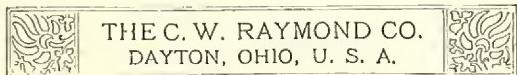
CAPACITY, from 2,000 to 3,000 American standard bricks per hour. A serviceable and inexpensive outfit for plants of this capacity. The bricks are delivered on pallets by the cutting table to be placed on cars or in racks for drying. They also are in convenient shape for carrying to the Re-press.



RAYMOND COMBINATION BRICK, TILE AND HOLLOW BLOCK CUTTING TABLE.

THIS Table is intended especially for cutting end-cut brick, tile, hollow blocks, fire proofing, etc. The wires can be readily adjusted to cut various lengths. It can be adapted to work with a single or double stream die and with a separating and off-carrier belt. Length over all, 6 feet. Width, 2 feet 4 inches. Height, 3 feet 3 inches. Weight, 300 pounds.

GENERAL CONSTRUCTION OF RAYMOND RE-PRESSES.



WE ARE pioneers of Power Re-pressing Machinery. We are original inventors and patentees of Automatic Feed and Delivery for Power Re-presses. The first successful Power Re-press was a Raymond. We have built in all six different designs, adapted for pressing nearly every conceivable form of plastic material, hence our experience in this line is unquestionable.

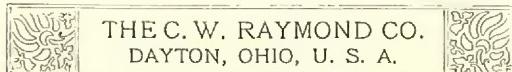
The Raymond series of Hand and Power Re-presses are constructed with a view of durability and longevity, under the hard and continuous duty incident to the manufacture of large quantities of building, fire and paving brick, ornamental brick, etc. The details of the various mechanical movements are few and simple, the wearing surfaces large, and ample provision is made to take up wear that the repairs may be reduced to a minimum.

The weight of the dies on all these presses is thoroughly counter-balanced, hence they can be operated at an astonishing rate of speed, using very little power and doing equally as good work, fast or slow. Long and continued use has shown that the efficiency of the operator alone limits their capacity.

We would also call attention to our Patented Automatic Feed and Delivery used in the power machines. They are convenient to operate, positive in their movement, and capable of very rapid and minute adjustment to various sizes. The dies do not form an integral part of the machine, hence can be readily removed and others substituted, thus making all our Re-presses universal in their adaptability to every kind of work within the range of possibility.

Years of experience has enabled us to combine in these presses all the requirements of rapid-working and successful machines. Not only is their construction up to the highest standard of mechanical excellence, but their ability to deliver and protect their product in a perfect manner is an established feature. No machines now before the public can show such an unbroken record of success as ours. That they possess more power, have greater capacity and make finer work than any other is not only our assertion, but the opinion of hundreds of users, whose names can be furnished upon application.

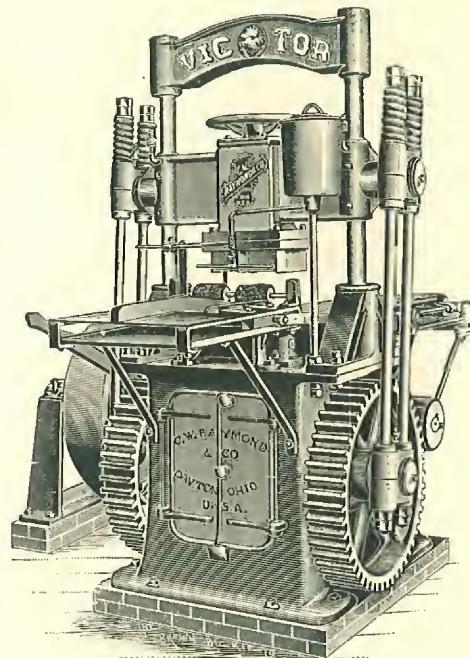
THE RAYMOND "VICTOR" RE-PRESS.

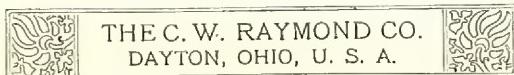


THE "Victor" Re-press has now been on the market for four years, and its record has been a royal succession of triumphs. It commends itself to all for its simplicity, compactness and total absence of small working parts, as well as many other

advantages and conveniences too numerous to mention, which must be seen to be appreciated. The "Victor" Re-press is built upon a solid base, which not only supports the working parts above the die, but encases the few necessary movements below, rendering them almost dirt and dust proof. But two shafts are used, from which the various movements of the press are actuated. These Shafts are cast-steel, and have Babbitted Bearings almost their entire length. The Main Gears are set under the base and protected by it. By this arrangement the width of the press is reduced to a minimum, its compactness giving it much strength and power.

The Cross Head is made of malleable iron, and will not break under the most exacting conditions. It has an up-and-down movement of but ten inches, consequently the press can be operated at much higher speed without detriment than where greater movement is required. The Head-Strap is strong and heavy, and by means of the hand and adjusting screw therein the pressure or thickness of the brick can be regulated instantly. The Feed is positive, easily and quickly set for various sizes of brick, and provision is made to thoroughly lubricate the brick before they enter the die. The Off-Carrier Belt can be readily thrown back, the die taken out and another quickly substituted. We are prepared to give reference to most of the leading building, fire and paving brick plants of the United States as to the efficiency of this Press. The Press is pronounced by all who have seen it to represent the highest degree of mechanical perfection yet attained in Re-press construction.





THE "VICTOR" RE-PRESS.

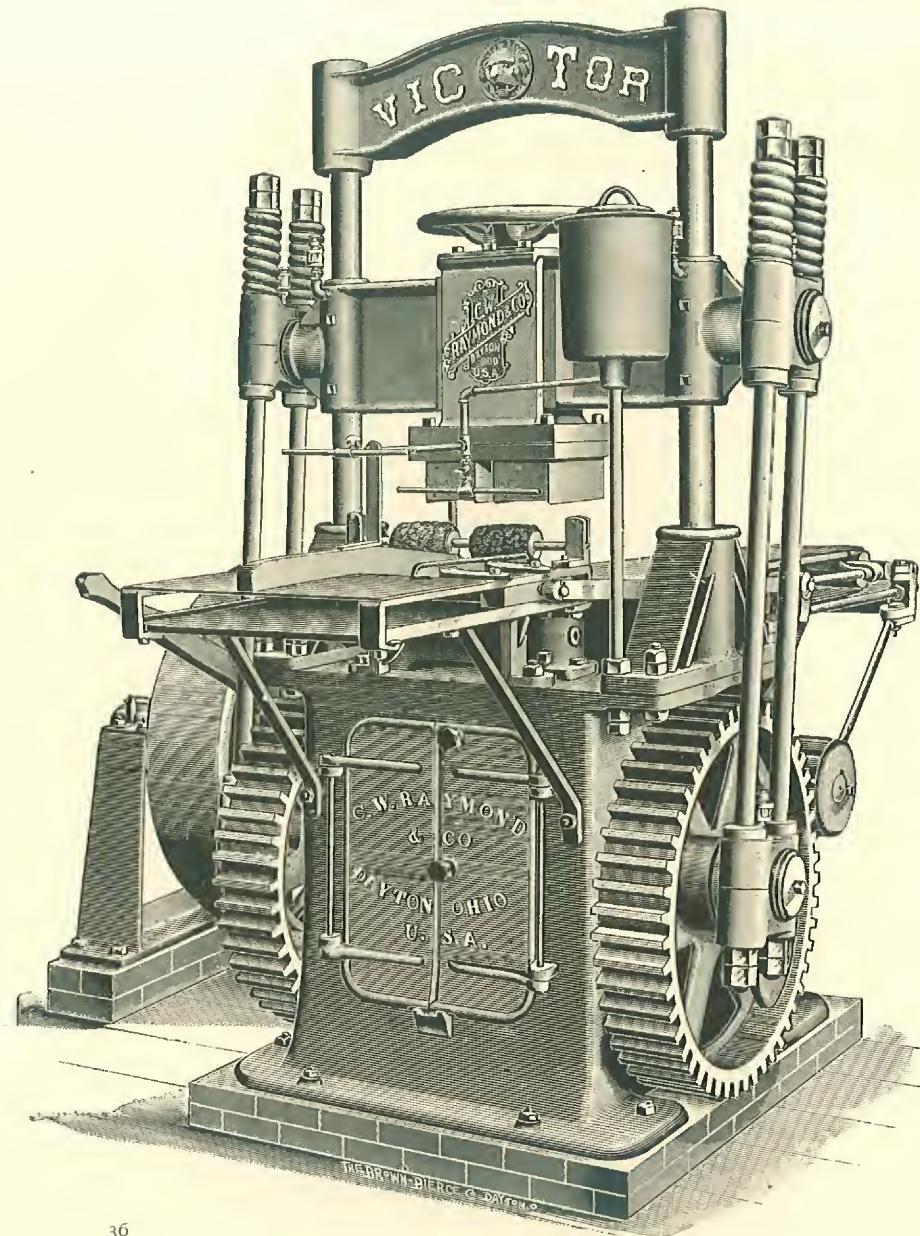
THIS Press is constructed for work on paving brick, red brick, fire brick, sidewalk blocks and all duty where great rapidity of operation is desired. It occupies a space 6 feet 6 inches wide by 8 feet long, including outer bearing and off-carrier belt, and is 8 feet high from top of foundation. The top of the Feeding Table is 37 inches above the foundation and the cast-iron base is 34 inches wide by 39 inches long. It is equipped with a Friction Clutch Driving Pulley 36 inches diameter by 8-inch face which should run at 80 revolutions per minute. One steel-lined double die with either round or square corners is included with each press. Capacity, 2,000 to 2,800 American standard size bricks per hour. Approximate weight 7,000 pounds.

Illustrations of paving blocks, sidewalk blocks and fire brick on pages 86 and 88.

PATENTS.

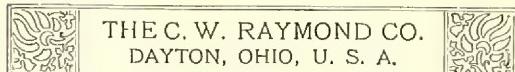
December 14, 1886.
December 24, 1886.

January 24, 1890.
June 14, 1892.



THE "VICTOR" RE-PRESS.

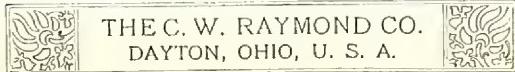
FOR ROMAN, NORMAN AND POMPEIIAN BRICK.



TO MEET the demand for pressing these popular styles of brick we build a modification of the "Victor," which has proven highly satisfactory wherever used. The main portions of the press are the same as those on the regular machine, but the feeding and off-bearing mechanism is especially built to accommodate the extra-length dies and allow ample time and space for convenient handling.

RAYMOND RE-PRESS DIES.

The construction of Dies is a question to which we have devoted much serious attention, and is the vital one in making machinery for re-pressed brick. We make two kinds of Dies—plain and steel-lined. The Plain Die is built of the finished castings with no steel linings, and is used on the Hand Presses where ornamental work is made or a limited amount of work required. Our Steel-Lined Dies are, as their name implies, entirely lined with the hardest steel, ground to an accurate finish on a series of special grinding and finishing machines, which we have designed and constructed for the purpose. The linings of the plungers are in such shape that, when worn, strips of paper can be inserted to pack them out and take up the wear, and the dies can be re-dressed and re-ground, thereby being made to last for years. The plungers are usually made slightly convex unless otherwise ordered. We can, however, make them straight or concave for use in special clays. The configurated plates for making paving blocks, sidewalk blocks, ornamental brick, etc., are always made in brass unless specially ordered in other material. For making split, side or end-arch fire brick a change of plungers only is necessary. A single die consists of a die box, top and bottom plunger, with plunger stem. A double die consists of a double box with two separate bottom plungers and plunger stems, and two top plungers, attached to a plunger plate.

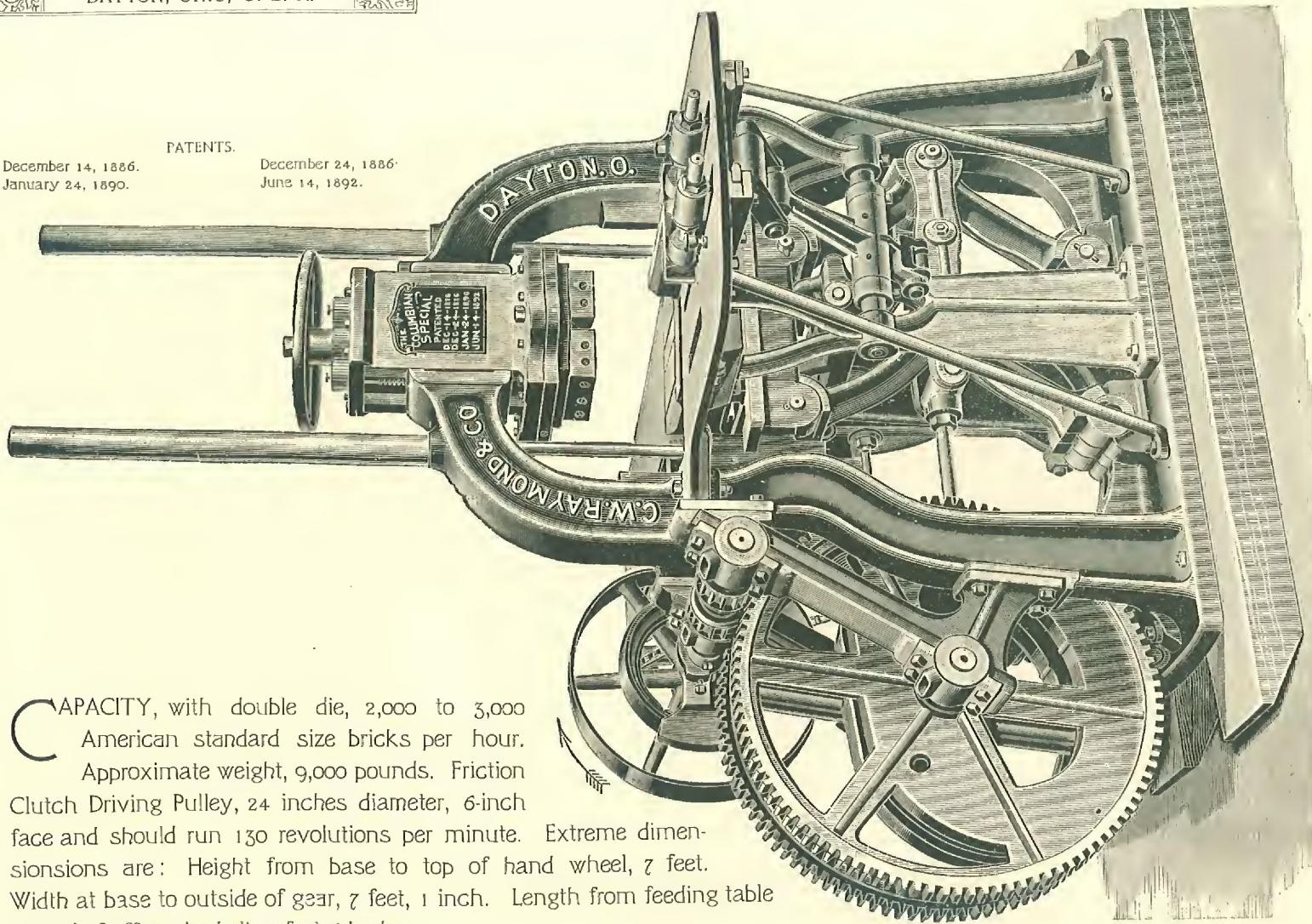


THE C. W. RAYMOND CO.
DAYTON, OHIO, U. S. A.

PATENTS.

December 14, 1886.
January 24, 1890.

December 24, 1886.
June 14, 1892.



CAPACITY, with double die, 2,000 to 3,000 American standard size bricks per hour. Approximate weight, 9,000 pounds. Friction Clutch Driving Pulley, 24 inches diameter, 6-inch face and should run 130 revolutions per minute. Extreme dimensions are: Height from base to top of hand wheel, 7 feet. Width at base to outside of gear, 7 feet, 1 inch. Length from feeding table to end of off-carrier belt, 8 feet 6 inches.

THE RAYMOND "COLUMBIAN" RE-PRESS.



THE C. W. RAYMOND CO.
DAYTON, OHIO, U. S. A.

IT IS BUILT entirely of iron and steel, its movements operating in one solid yoke or frame, make it thoroughly

self-contained. Its movements are counter-balanced, and can be operated at high speed without detriment to its parts. It weighs about 5,000 pounds, and will exert an estimated pressure of 45,000 pounds per square inch on each brick.

It is a universal Press upon which all dies bordering on brick sizes can be worked, such as red brick, fire brick, paving blocks, roofing tile, etc. Its dies can be changed readily and the pressure and thickness of the brick adjusted instantly. But one horse power is required to operate it.

It is provided with our Positive Automatic Feed and delivery, both of which movements are models of mechanical exactness and simplicity.

The alignment of its working parts is perfect, insuring a true, square and even product. All working parts are provided for taking up the wear.

The Columbian is a high-grade, high-speed press. Its output is limited only by the ability of the operator to handle the brick.

The Friction Clutch Pulley is 20 inches in diameter, 4-inch face, and should be run 125 revolutions per minute.

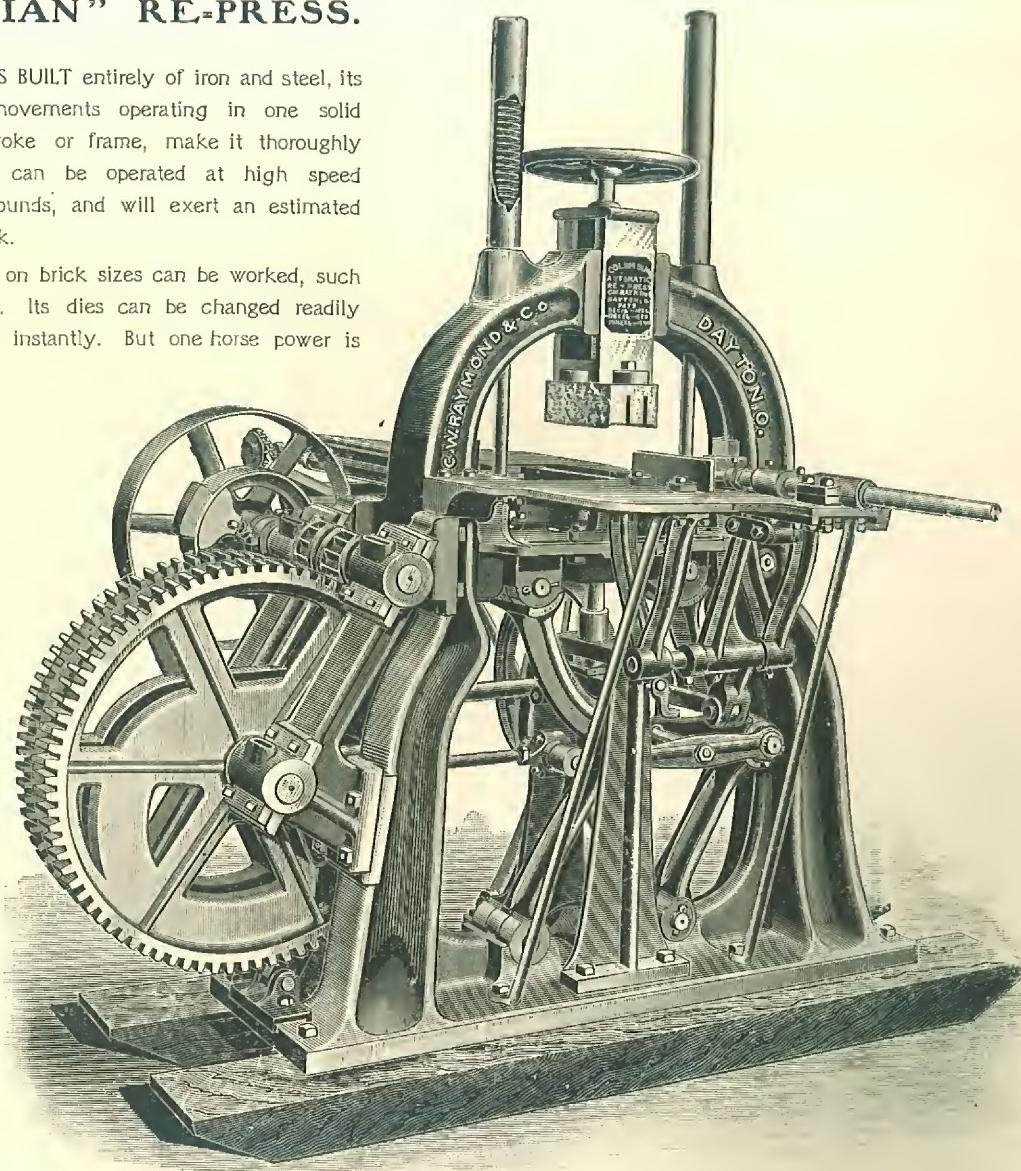
One Steel-Lined Die furnished with the press; also our Automatic Oiling Device, Wrenches, etc.

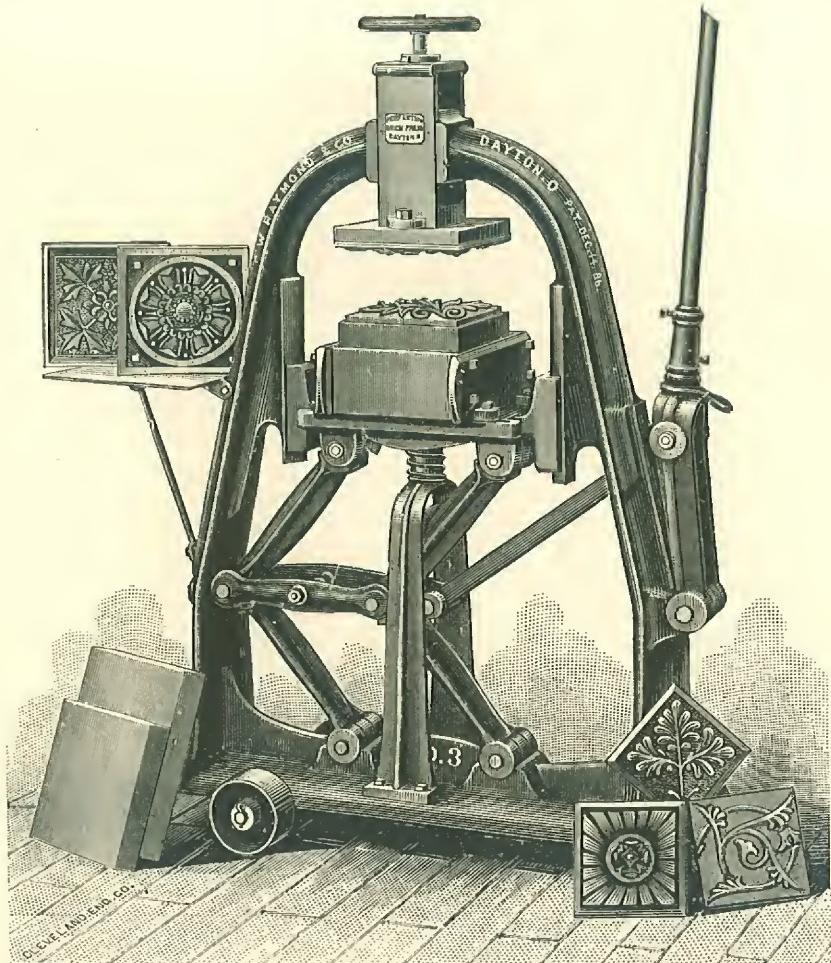
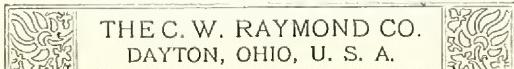
The capacity is from 1,000 to 1,500 per hour, and it will re-press a block as large as 10 by 10 inches by $3\frac{1}{2}$ inches.

Length over all, 5 feet 9 inches. Height to top of wheel, 5 feet 7 inches. Width, 7 feet 7 inches.

Illustrations of paving and sidewalk brick on page 94. Fire brick, page 96.

Patented, December 14, 1886; December 24, 1889; January 24, 1890; June 14, 1892.





RAYMOND No. 3 PERFECTION BRICK PRESS.

FOR pressing large tile, paving blocks, ornamental work, etc., it has great power and an almost unlimited range, dies as large as 18 by 14 by 5 inches, and any size smaller, can be worked upon it. Its manner of making ornamental work and terra cotta is as follows:

The clay is first struck out by a machine or molded by hand, in order to get the requisite amount in the block and shape it for convenient handling. After allowing it to partly dry it is put under pressure as indicated. With one motion of its powerful lever, the most elaborate and costly designs are produced, automatically removed from the die and ready for the work of the off-bearer. As many as 2,000 of these finished blocks have been made in ten hours on one press.

The embellished plates shown in the engraving can be used upon each die in endless variety. They are made usually in brass, from designs submitted by the purchaser, or furnished by the manufacturers of the press.

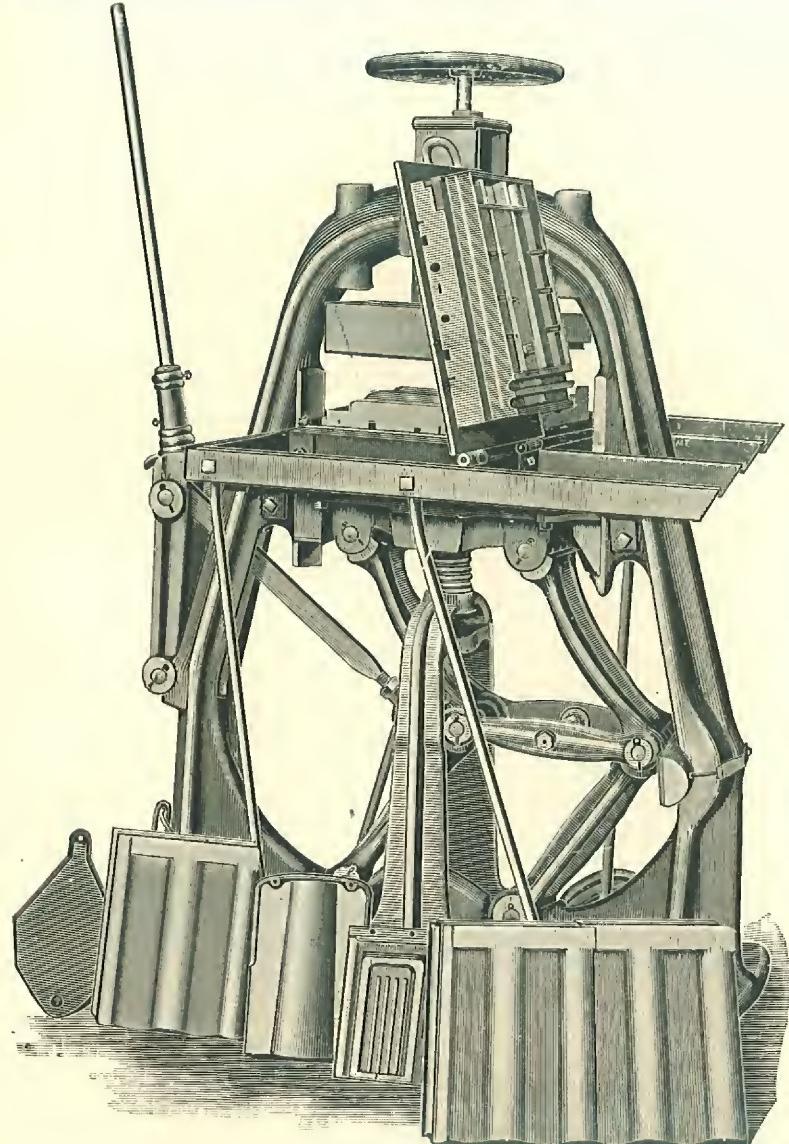
By the great pressure employed each block is given uniformity of size and figure, is thoroughly solidified and its most obscure parts pressed into prominence.

No previous shaping of the brick in a mold is required, and all annoyance of loose plates in the bottom of the die is avoided. The work in progress is always within full view of the operator, and need not be removed from the press until perfect in shape.

By this arrangement all shapes and designs of ornamental brick can be made at a very small cost for labor and dies.

Weight, 1,500 pounds.

Illustrations of ornamental brick, pages 98 to 112 inclusive.



RAYMOND No. 3 PERFECTION HAND BRICK PRESS.

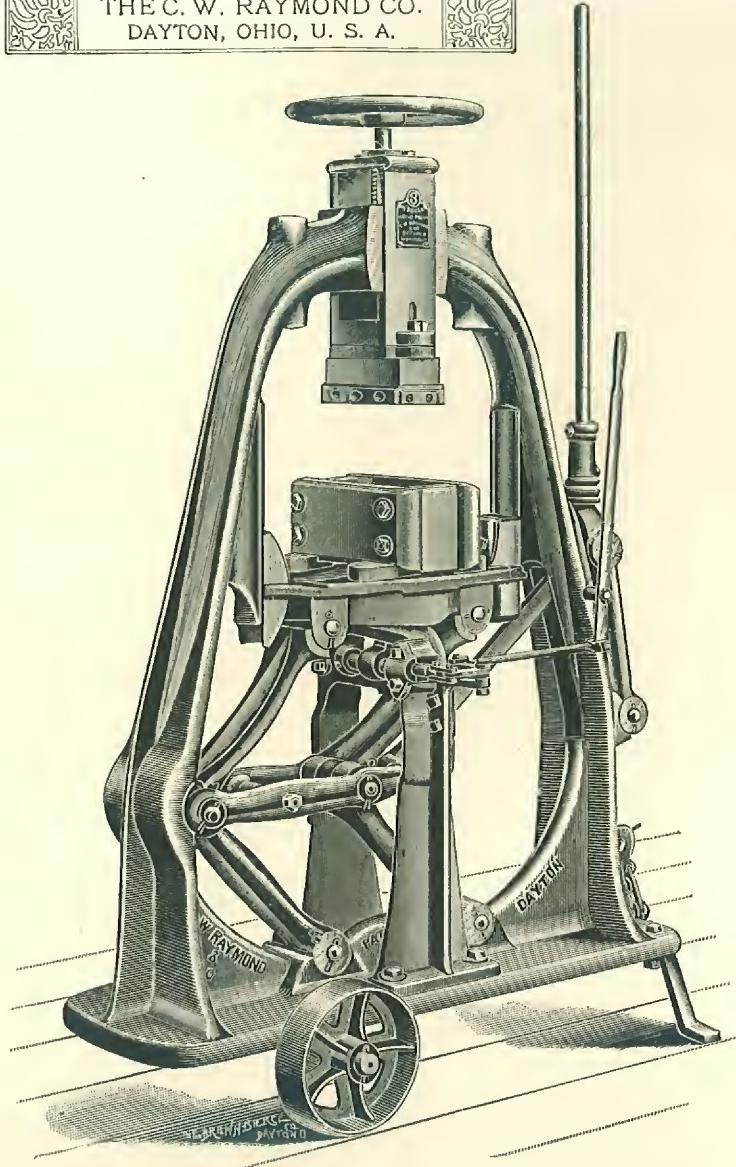
Arranged for Roofing Tile.

THIS machine, as shown by the illustration, consists of a Perfection Re-press, to which is attached a dumping mechanism that enables the operators to dump the finished shingle onto a pallet without handling or defacing it in any manner.

In its operation three formers or shaping plates are required, one of which is permanently attached to the top plunger of the die. The other two, to the bottom ones, are connected with the dumping table by means of dove-tailed guides. The gluts or blanks from which the shingles are made are placed on these bottom plates, then pushed onto the die, where the pressure is applied. As one plate is being pushed on it pushes the other off the die to the table where the shingle is dumped on a pallet. By this mode of working, as one shingle is being pressed another is being removed; thereby the operation is continuous, and the repeated delays that were so common with past methods are avoided.

Another feature of no small importance is the enormous pressure exerted by this machine because of the toggle joint movement. Everyone familiar with mechanical law is aware that more power is contained in a toggle joint than any known mechanism, and at a point where the most pressure is obtained the least operating power is required. Thus it will be readily admitted that a machine containing this movement insures a more dense and a better finished product than it is possible to make on any other machine. Weight, 1,850 pounds.

Illustrations of roofing tile, pages 95 and 96.



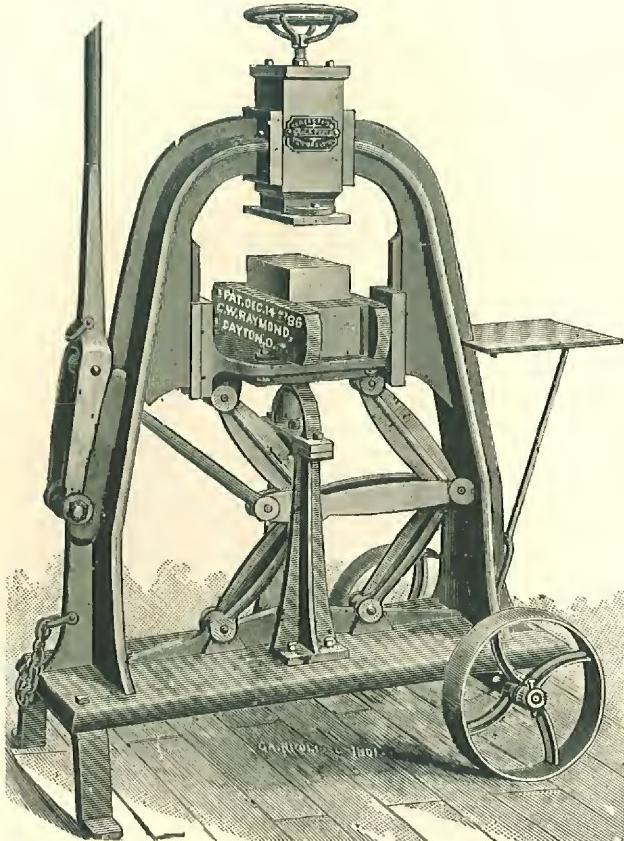
RAYMOND No. 3 PERFECTION BRICK PRESS.

ARRANGED FOR DRY PRESS WORK.

WE ILLUSTRATE herewith another adaptation of the No. 3 Perfection Press, which is used on a number of the most prominent dry press yards in the country in making their ornamental and shape work, and which has proven itself amply powerful and strong to press the most refractory semi-dry clay into beautiful and perfect dry press ornamental and square brick. It consists of a No. 3 Press, upon which is placed a die of extra depth. The brick are pressed and delivered from the die the same as upon the ordinary machine, but it differs therefrom, in that after the brick is removed the small auxiliary lever is operated, allowing the lower plunger to drop to the bottom of the die, forming a box ready to be filled with powdered clay for the next brick. All kinds and varieties of ornamental and shape work can be pressed upon this machine in a profitable, economical and satisfactory manner.

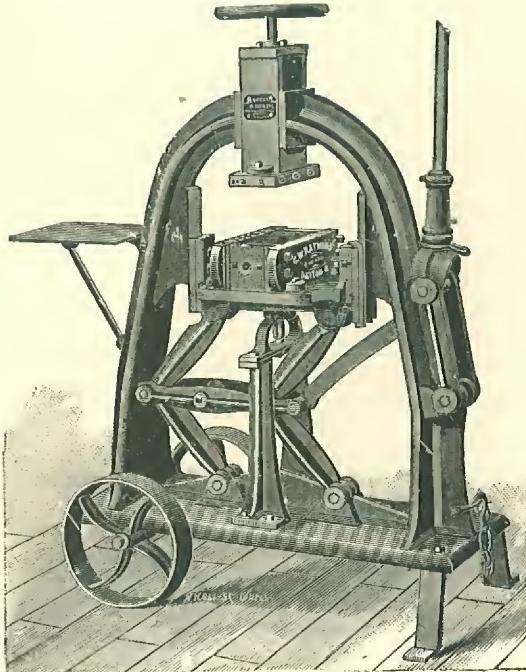
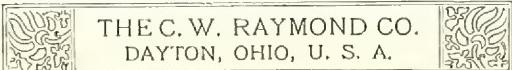
We think it deserves the most careful consideration of all who are interested in this line of work, as it has proven a great source of saving on every dry press yard on which it has been used, and would certainly do so in any place where this kind of work is required.

The matter of making shape brick on the large Power Dry Presses is slow, expensive and unsatisfactory. By the use of the No. 3 the large presses can work exclusively on square brick, and allow the shape work to be made on the hand press, on which the dies, liner blocks, ornamental plates, etc., can be quickly and readily changed, the work watched at all stages of its progress and pressed a second or third time when the design is not fully brought out. Weight, 1,600 pounds.



RAYMOND No. 2 PERFECTION BRICK PRESS.

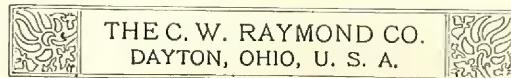
THE No. 2 Press is larger than the No. 1, and will work a die as large as 11x11 inches and any size smaller. It will also admit of a greater range of work between the plungers. For red brick, fire brick, paving blocks, floor tile and general use on the brick yard, it is probably the best of the series. It is especially adapted to fire brick. In this line, split brick, side and end-arch and various shapes can be made upon the one die by only a change of plungers. Weight, 900 pounds.



RAYMOND No. 1 PERFECTION BRICK PRESS.

THE No. 1 Press is the smallest of our series of hand Re-presses. It is, nevertheless, a practical machine, has great power and can be operated with unusual rapidity. It is used principally for red brick. It will work a die as large as 9x9 inches, and any size smaller. Ornamental work up to this size can be made upon it. Where a great number of bricks are required per day, it is probably better than the heavier sizes. Weight, 750 pounds.

GRANULATORS AND PUG MILLS.



THE C. W. RAYMOND CO.
DAYTON, OHIO, U. S. A.

OUR ten-foot Clay Granulator is a machine of liberal proportions and heavy design. It is adapted to the granulation of clays or other materials which are delivered in large lumps that do not readily fracture, preparatory to the feeding of the Clay Separator or Pug Mill, or the mixing of quantities of material of most any kind in a dry or semi-dry state.

The Pug Mill is designed for the mixing of clay in a moist or plastic state to feed the brick or other clay forming machine it is operating in connection with. Many new and original features, both of design and construction, are embraced in our line of mills, which, combined with good material and competent workmanship, cannot but command the favorable consideration of the trade.

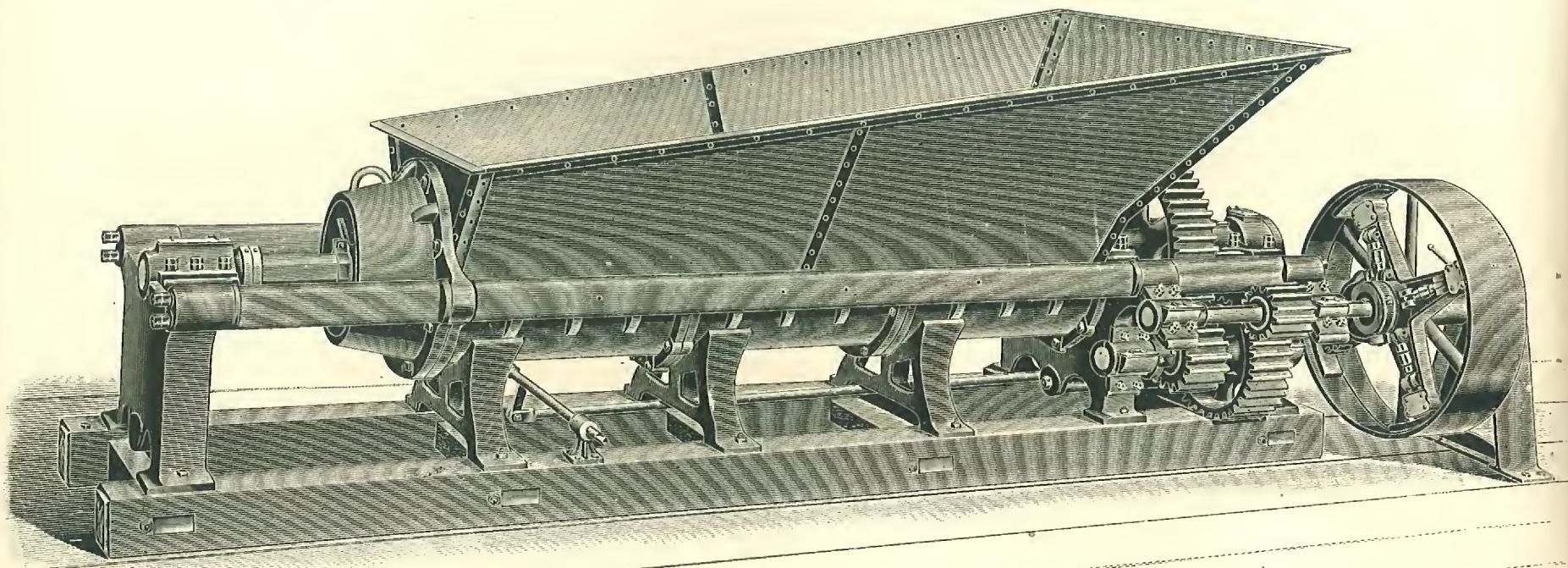
The Tub or curved part of the shell is made of flange steel $\frac{1}{4}$ -inch thick. Extending, as it does, by its peculiar construction over the knives beyond the perpendicular, it prevents the clay from banking up and increases the tempering surface, while at the same time the hopper shape of the flanges above furnishes ample feeding room. It thus offers the advantages of both an open and a closed-top Pug Mill.

The Heads are of heavy proportions and the Pinions on the larger sizes are of cast steel. The Shafts are of the best turned steel and are of sufficient size to possess a large margin of strength beyond all possible requirements. The Main Shaft is of hexagon hammered steel to which is securely fastened from sixteen to twenty-eight blade holders. This Shaft can be removed without dismounting the entire Mill. The Blades are of chilled iron or hammered steel, and can be regulated to suit required feed. Blades are independent and can be removed without interfering with others.

The thrust of the Shaft is upon a renewable bell-metal bearing, which is outside of the head and well protected from dirt and grit. Large babbitted bearings are used.

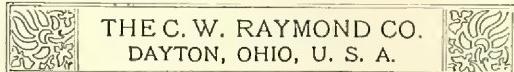
Those interested in machines of this character will do well to examine ours closely before purchasing elsewhere.

THE C. W. RAYMOND CO.
DAYTON, OHIO, U. S. A.

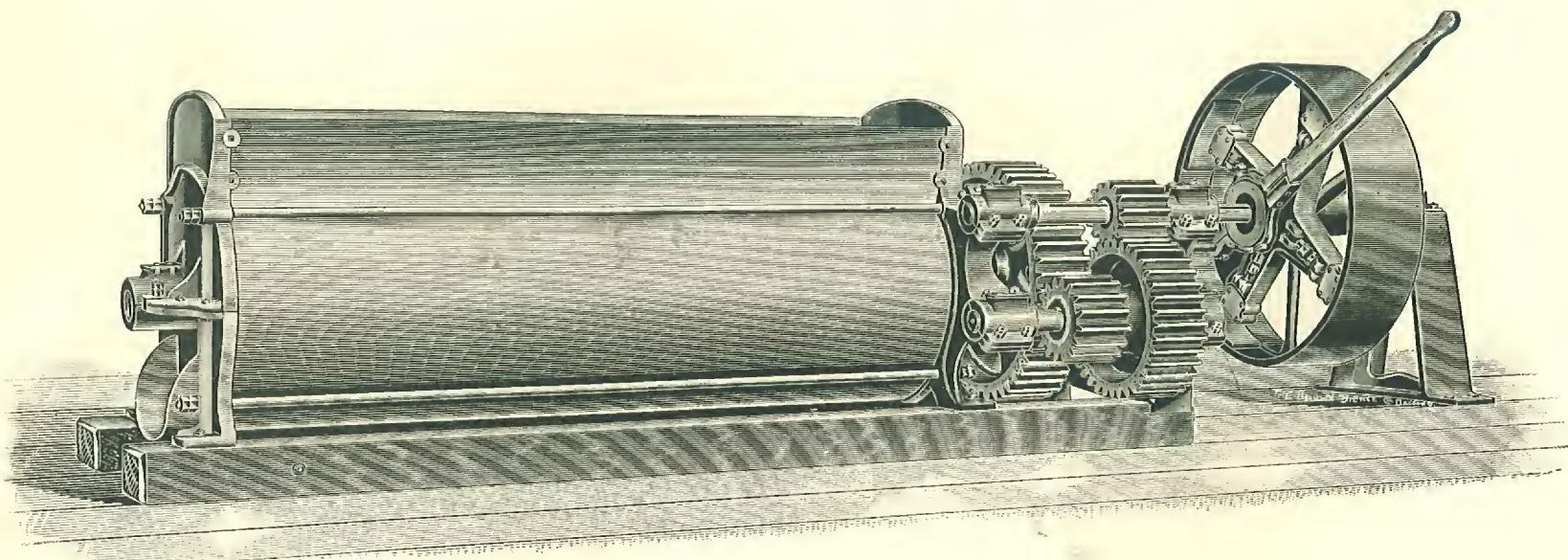
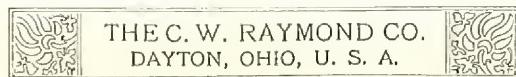


RAYMOND 10-FOOT CLAY GRANULATOR.

10-FOOT CLAY GRANULATOR.



proper and correct manner. The Main Shaft is of hexagon hammered steel 5 inches in diameter, with bearings 14 and 16 inches long, and a substantial thrust bearing of the most improved pattern. The Knives are very heavy and can be removed from the Shaft without disturbing it. The Intermediate and Driving Shafts are of cast steel $3\frac{1}{2}$ inches in diameter with bearings 11 inches long. The main gear is 34 inches in diameter, 8-inch face. Both Pinions are of crucible cast steel. It is back geared 11 to 1, and provided with a four-arm Friction Clutch Pulley 42 inches in diameter by 12-inch face which should run at 250 revolutions per minute. The Hopper is made of $\frac{1}{2}$ -inch boiler steel, and is of sufficient size to meet all requirements. When erected for operation, the machine occupies a space 19 feet 2 inches long, 7 feet 6 inches wide, 5 feet 2 inches high. It has sufficient capacity to meet all ordinary requirements, and weighs, approximately, 18,000 pounds.



RAYMOND COMPOUND-GEARED PUG MILL.

No. 0 SPECIAL PUG MILL.



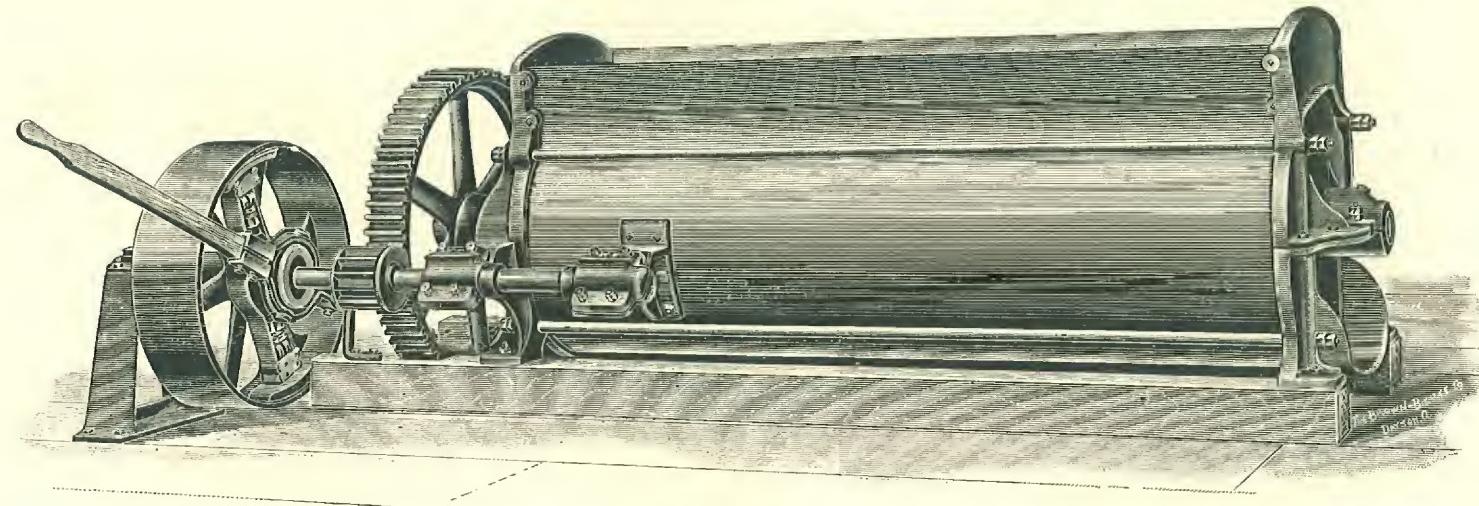
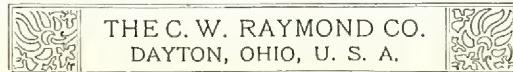
THE GEARS are best quality gray iron of extra heavy pattern with 8-inch face. The Pinions are 8-inch face of crucible cast steel. The Main Shaft is $4\frac{1}{2}$ inches diameter, hexagon hammered steel with bearings 14 inches long. This Shaft is fitted with 56 Chill Pugging Knives. The Shell is 30 inches diameter by 14 feet long. The Driving and Intermediate Shafts are 3 inches diameter of cold rolled steel with bearings 12 inches long. Machine is fitted with a four-arm Friction Clutch Pulley 42 inches diameter by 12-inch face, which should run 200 revolutions per minute. Length, 22 feet 6 inches. Width, 5 feet 6 inches. Height, 4 feet. Weight, about 9,200 pounds. Capacity 60,000 to 100,000 bricks per day.

No. 0 PUG MILL.

In details the No. 0 Pug Mill is an exact duplicate of the No. 1, except the chamber is longer, being 30 inches diameter by 12 feet long. The Main Shaft is fitted with 48 Chill Pugging Knives. Length, 20 feet 6 inches. Width, 5 feet 6 inches. Height, 4 feet. Weight, about 8,000 pounds. Capacity 50,000 to 70,000 bricks per day.

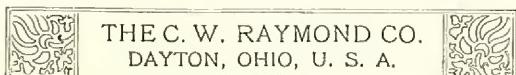
No. 1 PUG MILL.

The Gears are 6-inch face. The Main Shaft is 4-inch hexagon hammered steel, on which is fitted 40 Chill Pugging Knives. The shell is 30 inches diameter by 10 feet long. Machine is fitted with a Friction Clutch Pulley 36 inches diameter by 10-inch face, which should run 175 to 200 revolutions per minute. Length, 18 feet. Width, 5 feet 4 inches. Height, 3 feet 10 inches. Weight, about 6,750 pounds. Capacity 40,000 to 50,000 bricks per day.



RAYMOND SINGLE-GEARED PUG MILL.

No. 2 PUG MILL.



THE C. W. RAYMOND CO.
DAYTON, OHIO, U. S. A.

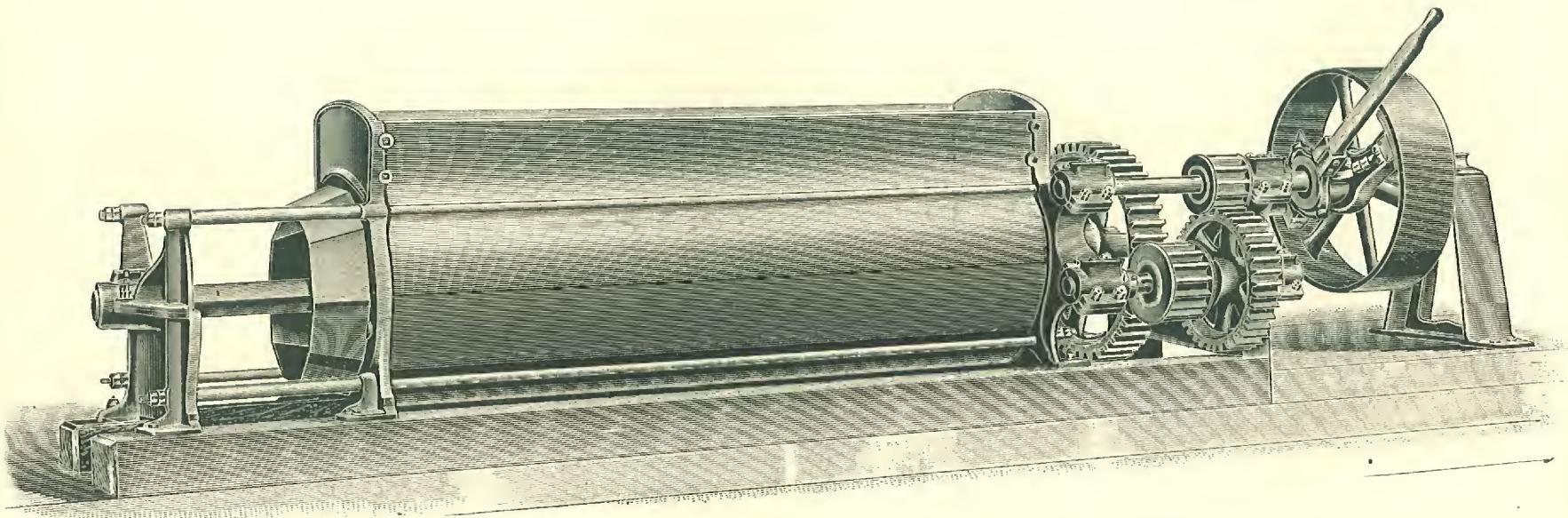
THE Gears are 6-inch face. The Main Shaft is $3\frac{3}{4}$ -inch hexagon hammered steel fitted with 36 Chill Pugging Knives. The Chamber is 9 feet long by 30 inches in diameter. The Driving and Intermediate Shafts are of cold rolled steel $2\frac{1}{2}$ inches in diameter. Machine is furnished with Friction Clutch Pulley 36 inches in diameter by 10-inch face, which should run 150 revolutions per minute. Length, 15 feet. Width, 5 feet 4 inches. Height, 3 feet 9 inches. Weight, 5,450 pounds. Capacity, 30,000 to 45,000 bricks per day. When purchasers desire, the No. 2 Pug Mill is furnished with Compound Gears.

No. 3 PUG MILL.

Single geared, all iron and steel. Weight, 4,500 pounds. Estimated capacity, 20,000 to 30,000 bricks per day. Gears have 6-inch face; ratio, 6 to 1. Main Shaft, $3\frac{3}{4}$ -inch hammered steel. Shell, 8 feet long and 30 inches in diameter. Has 30 Chilled Blades. Friction Clutch Pulley, 36×10 inches, should be run 150 revolutions per minute. Length, 13 feet 8 inches. Width, 5 feet 3 inches. Height, 3 feet 9 inches.

No. 4 PUG MILL.

The Gears are 5-inch face. The Main Shaft is $3\frac{1}{2}$ -inch cold rolled steel, and is fitted with 26 Chill Knives. The Chamber is 24 inches in diameter by 6 feet long. The Driving Shaft is cold rolled steel $2\frac{1}{2}$ inches in diameter. Machine is furnished with a Driving Pulley (tight and loose), 30 inches in diameter by 8-inch face, which should run 135 revolutions per minute. Length, 12 feet 4 inches. Weight, 3,500 pounds. Capacity, 15,000 to 25,000 bricks per day.



RAYMOND OPEN-END PUG MILL.

Any of the preceding Pug Mills will be constructed with open end, similar to the above design, when so ordered.

THE SOFT MUD PROCESS OF MAKING BRICK.



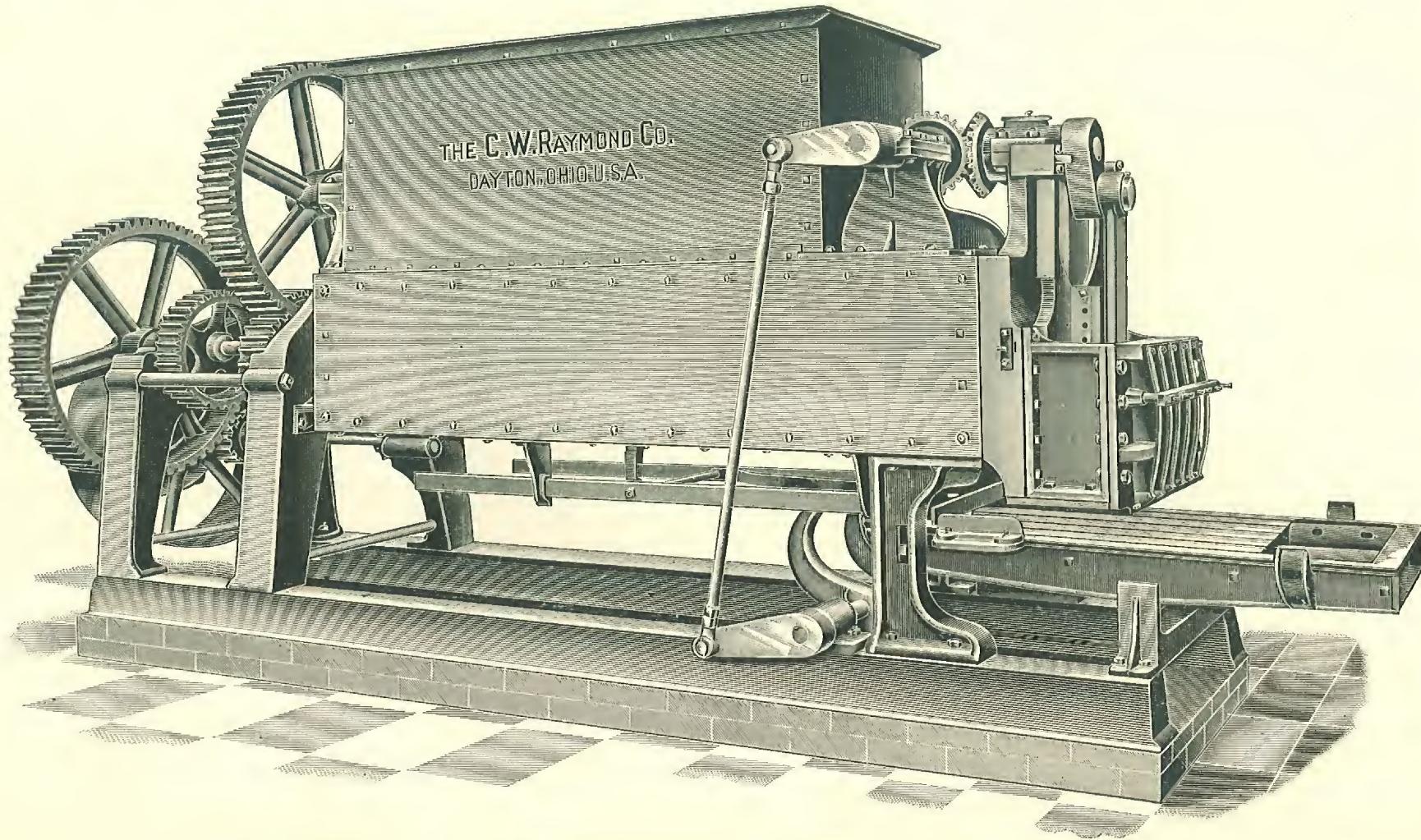
FOR the benefit of our readers who are not familiar with the various methods of making brick, we submit a brief outline of the soft mud process.

This process is absolutely indispensable in many clays. Clays of a short, sandy nature, or those with a disposition to excessive lamination by the stiff plastic process, are readily treated by the soft mud system, and most beautiful sand-faced bricks are produced.

As a general rule, the clay is first passed through a Separator or Disintegrator which thoroughly pulverizes the lumps. It then passes onto an Elevator which raises it to the Pugging Chamber of the Brick Machine. Here it is mixed with a sufficient quantity of water and thoroughly pugged. The Brick Machine presses it into wooden molds, the interior surfaces of which have been previously sanded by a sanding machine. The molds are removed from this machine automatically. They are then placed upon a Revolving Dumping Table, where the bricks are dumped onto pallets, the empty mold being again sanded and passed through the Brick Machine as before. The pallets, after receiving the bricks, are placed upon trucks and hauled to racks, or upon Drier Cars and run into an Artificial Drier.

This system produces a perfectly homogeneous body to the brick, has proved of great advantage in many clays, and is thought by many well-informed people to be the only system of properly producing a brick.

The Raymond Horizontal Stock Brick Machines are no experiment, but have been on the market for the past six years. We have a number of them in daily use whose owners take pleasure in attesting their merits. They are strong and reliable, and with reasonable care will withstand years of hard usage.



RAYMOND No. 1 HORIZONTAL STOCK BRICK MACHINE.

THE RAYMOND No. 1 HORIZONTAL STOCK BRICK MACHINE



IS THE HEAVIEST, strongest and most substantial soft-mud machine on the market. It is entirely constructed of iron and steel, and its symmetrical proportions, together with its neatness and convenience of design at once appeal to all who see it. Ample material has been provided in each and every part for a large surplus of strength, insuring it against almost every contingency or emergency that may arise. Its construction is simple, and there is nothing about it to get out of order. All parts are easily accessible.

THE GEARS have extra wide faces, and are heavy in proportion to the work required. The machine is compound geared, and is, therefore, easy and steady in its operation.

THE SHAFTS are of the best quality of cast steel with Bearings of large size, and all Oil Reservoirs are outside of the Clay Chambers. The two Bearings that work in the clay are provided with a Sleeve on the Shaft, which can be replaced at a trifling expense when worn, thus preventing any wear or injury to the Shaft.

THE DELIVERY TABLE is of extra substantial proportions, and can be easily raised and lowered. It has an adjustment of six inches. This feature will be fully appreciated by fire-brick workers, as blocks of various assorted sizes can be made.

THE PUSH ROD is operated by a Rock-Shaft bearing on the Sills, and consists of a Roller operating in two circular Arms attached thereto. This Rock-Shaft has a slow forward motion and pushes the mold out without jar or friction. The mold is pushed from under the Die while the pressure is on it, thus preventing the clay from being drawn from the end. The return gives ample time for inserting the next mold. With our Push Bar there are no slides or guides of any kind to wear, nor any trips, triggers or springs to get out of order, it being but a simple Rock-Shaft movement.



THE C. W. RAYMOND CO.
DAYTON, OHIO, U. S. A.



THE PLUNGER is veritably a "new departure," and is one of the meritorious features. It extends to the top of the machine, passing through long guides twenty-one inches apart, and is fitted with Gibs which can be adjusted to take up all wear. The Crank works in the center of the Plunger. By means of this construction, the Plunger always operates in a straight line, and all cramping or binding thereof is wholly avoided. The bricks are thus pressed true and square, and leakage is prevented.

THE FRAME supporting the Bearing for the main Plunger Shaft is cast in one piece and accurately planed and fitted in position, securing perfect alignment. The End Plates are heavy and strong and also planed and fitted.

THE FRONT PLATE of the Press Box is of rigid design and heavily ribbed to prevent springing, and thereby allow leakage of the clay. The Stone Doors are of modern pattern, and cannot break the mold. When a stone catches, that particular Door will open and let it pass out with the mold, after which it will automatically close. These Doors can be adjusted so that in soft clays they will act as a self-strike.

THE DIE is open in front, corresponding with the Stone Doors and built in such shape that nothing can prevent the free passage of the mold. It is also planed and fitted so that the mold passes from under it with ease, even when the table is up tight.

THE CHAMBERS are two in number, and are called the Upper and Lower Chamber. The Upper Chamber has a Shaft passing through it, carrying Knives which are made of spring steel set only four inches apart. These Knives give the clay a good chopping or grinding as it enters the machine, and deliver it to the Lower Chamber in which are two Shafts, each carrying heavy Pugging Knives that work the clay under the pressure of the weight in the upper Chamber. This method grinds and pugs the clay far better than it is possible to do with a long single-shaft pug mill, which usually moves it forward in one continuous spiral column. This feature alone is one of the greatest improvements ever offered in soft mud machines. With the great advantage gained in this style of construction, we do not require under any circumstances an additional pug mill in connection with the machine. The mill being open, the operator has a chance to determine the temper of the clay. However any reasonable variation therein will not interfere with the making of the brick.

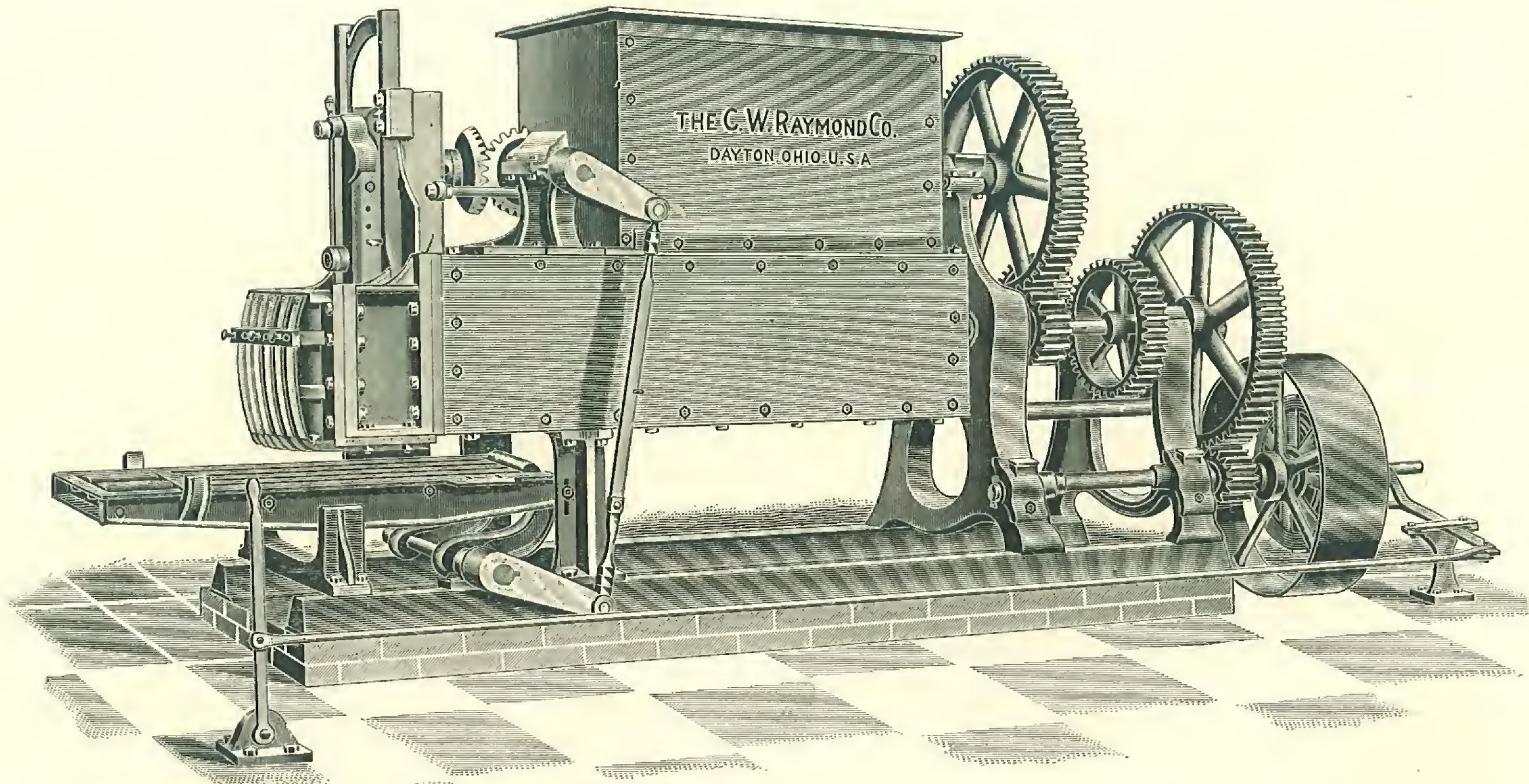


THE C. W. RAYMOND CO.
DAYTON, OHIO, U. S. A.

which, under all conditions, delivers a certain amount of clay, be it either stiff or soft. By using two of these augers side by side on the ends of the lower Pugging Shafts we completely cover the opening of the Press Box and fill it evenly. This is not generally done by a single wiper or auger, which exerts greater pressure in the center than at the ends of the Press Box. By delivering a uniform amount of clay throughout the length of the Press Box, every brick receives an equal pressure and contains an equal amount of clay. With sufficient power, bricks can be molded to most any degree of stiffness. It does not make three or four good bricks in the center of the mold and two or three bad ones in the end, but owing to the above described arrangement each and every brick is filled out perfectly with sharp and well defined corners.

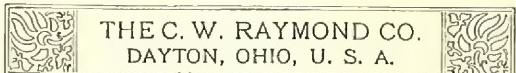
THE CAPACITY of the Raymond No. 1 Horizontal Stock Brick Machine is limited by the facility of the operators for handling and taking care of the bricks. The machine is capable and will mold at the rate of 60,000 bricks per day, and can be run at a speed from 3,000 to 6,000 per hour. It weighs about 18,000 pounds and is operated by a Friction Clutch Pulley 36 inches in diameter by 12-inch face, the speed of which is regulated by the desired capacity.

THE C. W. RAYMOND CO.
DAYTON, OHIO, U. S. A.



THE RAYMOND No. 2 HORIZONTAL STOCK BRICK MACHINE.

THE RAYMOND No. 2 HORIZONTAL STOCK BRICK MACHINE.



THIS is a substantial and serviceable machine of attractive design and well harmonized proportions that has been offered the highest encomiums by all of its users. It is not as heavy as the No. 1, but possesses all of its valuable features. The Gears are massive, and it is compound geared. The Shafts are of cast steel, with large bearings. The Delivery Table is proportionately heavy, and easily raised and lowered. The Push Rod is operated by the rock-shaft movement, similar to that on the No. 1, and the Plunger is provided with long adjustable guides. It has the same pugging feature, i. e. the two Chambers and the three Shafts, that is used in the No. 1.

The capacity of the No. 2 Horizontal Stock Brick Machine is largely limited by the facility of its operators. It can be run at any speed from 2,000 to 4,000 per hour. It weighs about 14,000 pounds, and is operated by a Friction Clutch Pulley 34 inches in diameter by 12-inch face, the speed of which is regulated by the desired capacity.



THE C. W. RAYMOND CO.
DAYTON, OHIO, U. S. A.

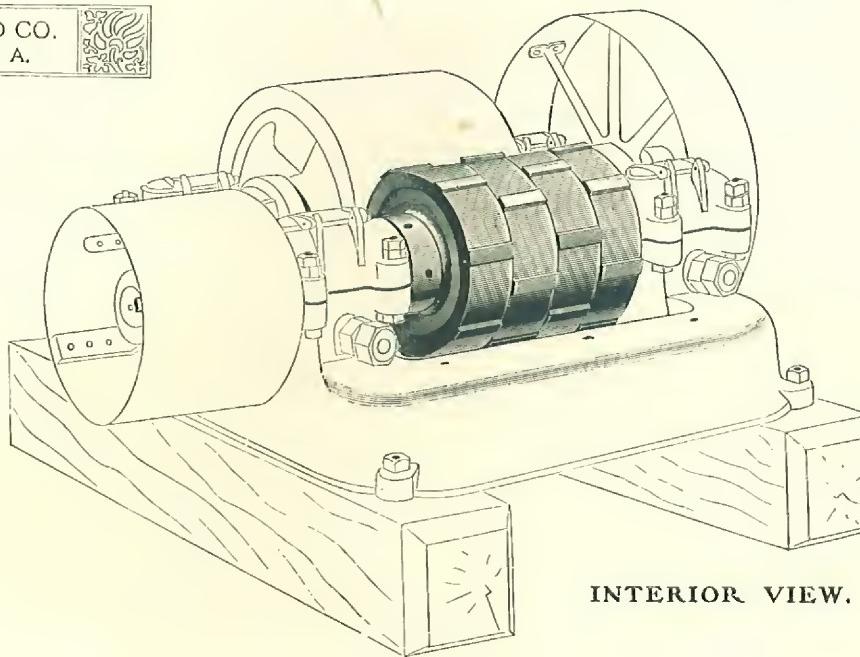
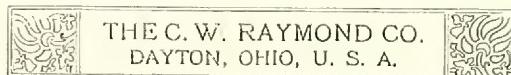
THE RAYMOND MOLD SANDER.

WE WILL be pleased to furnish, upon application, a photograph or cut of our new Sander, which is a strong, rigid and substantial machine, well adapted to the required duty. A Mold Sander is now considered requisite to every well regulated soft mud yard, as it saves sand and requires much less labor than sanding by hand.

It is built entirely of iron and steel, and has no chains or belts to give trouble. The working parts are few and sufficiently heavy, hence it cannot get out of repair. It will take any size mold and run at any desired speed. It is made to set either on the right or left-hand side of the machine, as desired. Therefore, when ordering, state whether right or left-hand machine is required.

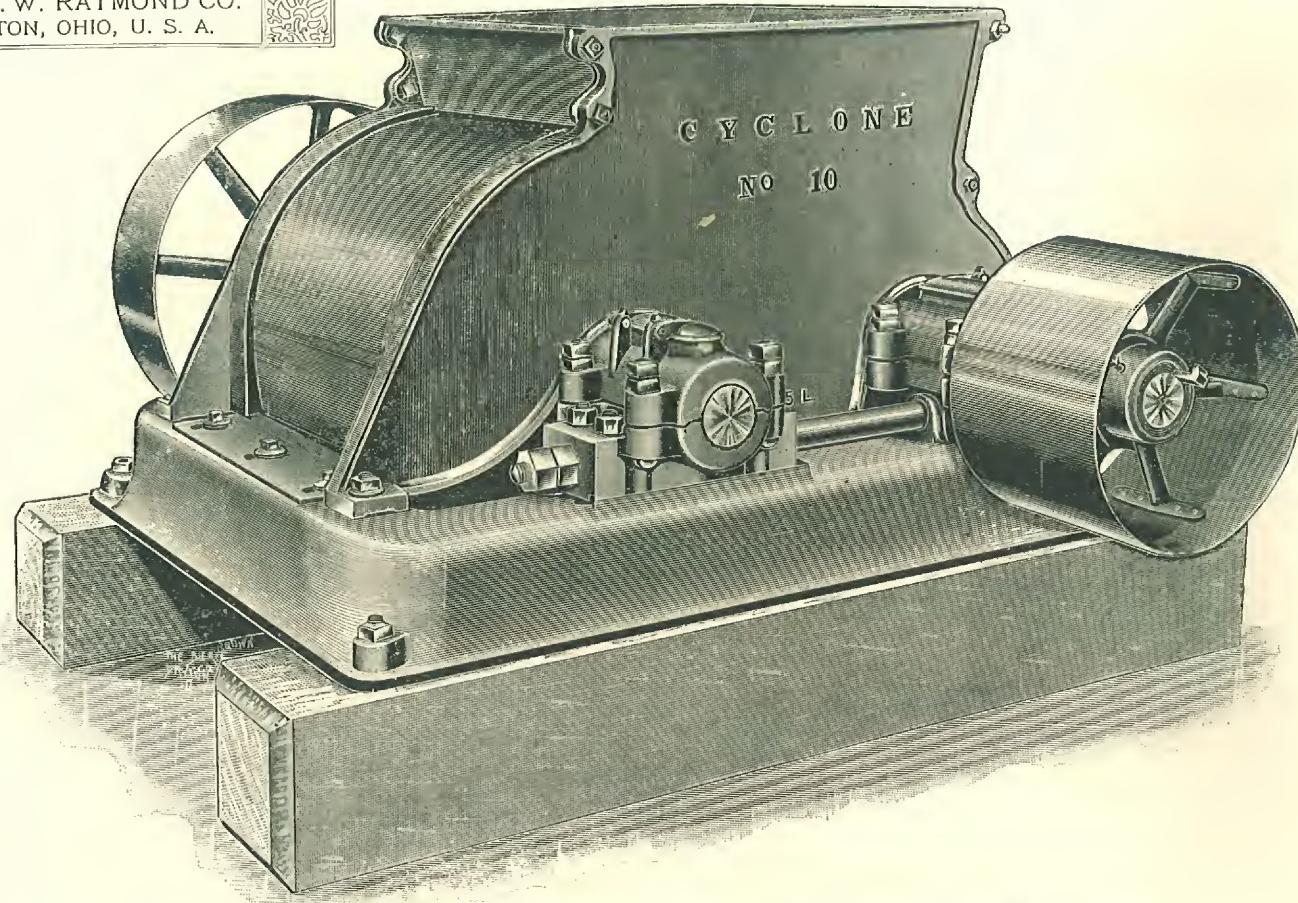
It weighs about 600 pounds and is driven by a Spiral Clutch Pulley 16 inches in diameter by 3-inch face, that makes three revolutions to each mold sanded.

THE RAYMOND CLAY AND ORE SEPARATORS.



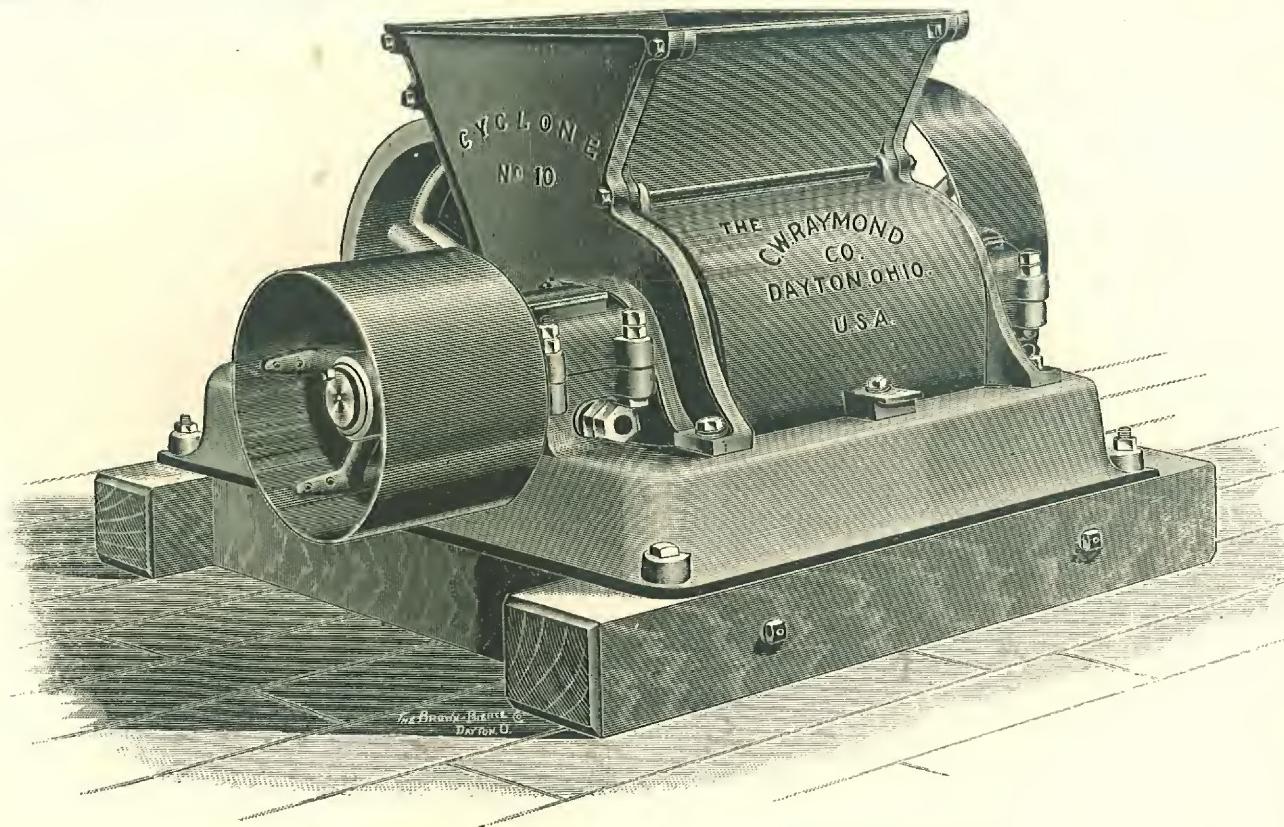
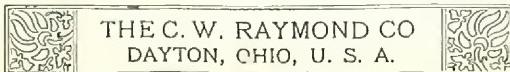
INTERIOR VIEW.

We herewith present illustrations and descriptions of our Clay and Ore Separators, which we build in three sizes—the No. 10 Special, the No. 10 and the No. 20. These machines are built upon the most rigid and durable lines. The Feeding Roll is made of chilled iron. The Bearings of this roll are adjustable, so that the distance between it and the Cutting Roll can be regulated to separate the material to the desired degree of fineness. The High-Speed Roll is made in sections, having Projecting Lugs or Teeth, which are set alternately one with the other. By this method the machine requires less power to run it. It feeds the clay gradually, separates it much finer and has an evenness of motion which cannot be obtained where the bars or lugs run continuously across the roll, striking the material each time with the full length of the bar. The Ring Sections of the Cutting Roll are made of white chilled iron, and are not only interchangeable but reversible on the shaft. By changing the position or reversing these sections when worn, entire new cutting surfaces are presented to the material and the complete new set of sections is a matter of much less cost than cutting bars.



RAYMOND No. 10 SPECIAL CLAY SEPARATOR.

FEED ROLL, 28 inches diameter, 25-inch face. Cutting Roll, 16 inches diameter, 25-inch face. The Shafts are $4\frac{1}{8}$ inches diameter, of steel, with 15-inch bearings. The Driving Pulley of the Feed Roll is 30 inches diameter, 10-inch face and should run from 100 to 125 revolutions per minute. The Driving Pulley of the Cutting Roll is 18 inches diameter, 14-inch face, and should run 750 to 800 revolutions per minute. Approximate weight, 5,000 pounds. Capacity, 6,000 to 8,000 bricks per hour. Extreme dimensions are: Length, 6 feet. Width, 6 feet 10 inches. Height, 3 feet 6 inches.

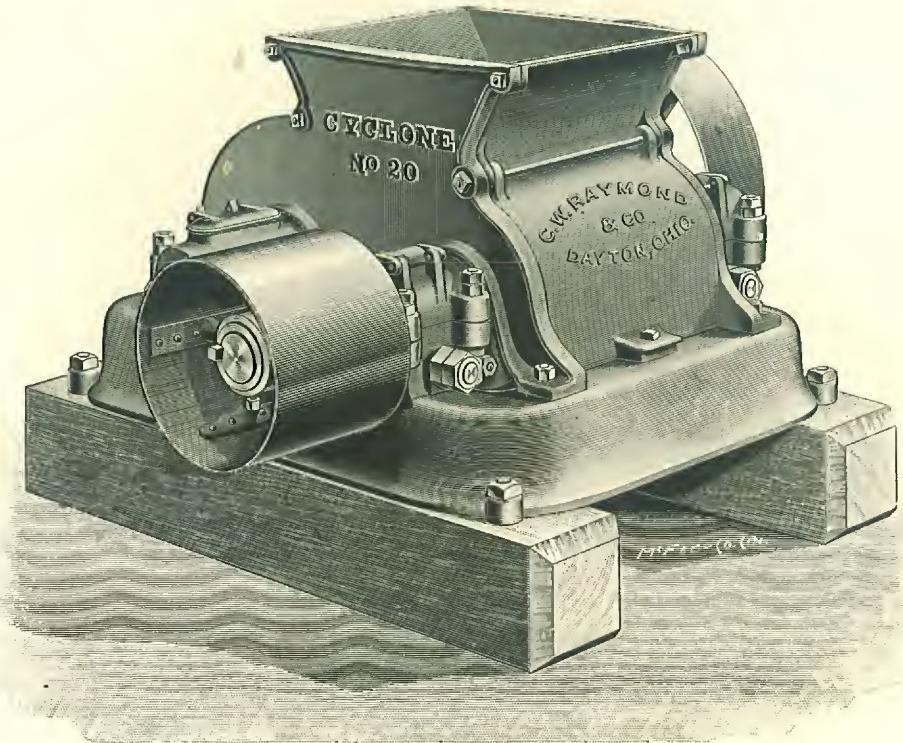


RAYMOND No. 10 SEPARATOR.

THE FEED ROLL is 24 inches diameter, 18-inch face. The Cutting Roll is 16 inches diameter, 18-inch face. The Shafts are $3\frac{1}{8}$ inches diameter, of steel, with 12-inch bearings. The Driving Pulley of the Feed Roll is 24 inches diameter, 8-inch face, and should run from 125 to 150 revolutions per minute. The Driving Pulley of the Cutting Roll is 14 inches diameter, 10-inch face, and should run from 750 to 800 revolutions per minute. Approximate weight, 3,500 pounds. Capacity, 4,000 to 6,000 bricks per hour. Extreme dimensions are: Length, 5 feet 2 inches. Width, 5 feet 8 inches. Height, 3 feet 1 inch.



THE C. W. RAYMOND CO.
DAYTON, OHIO, U. S. A.

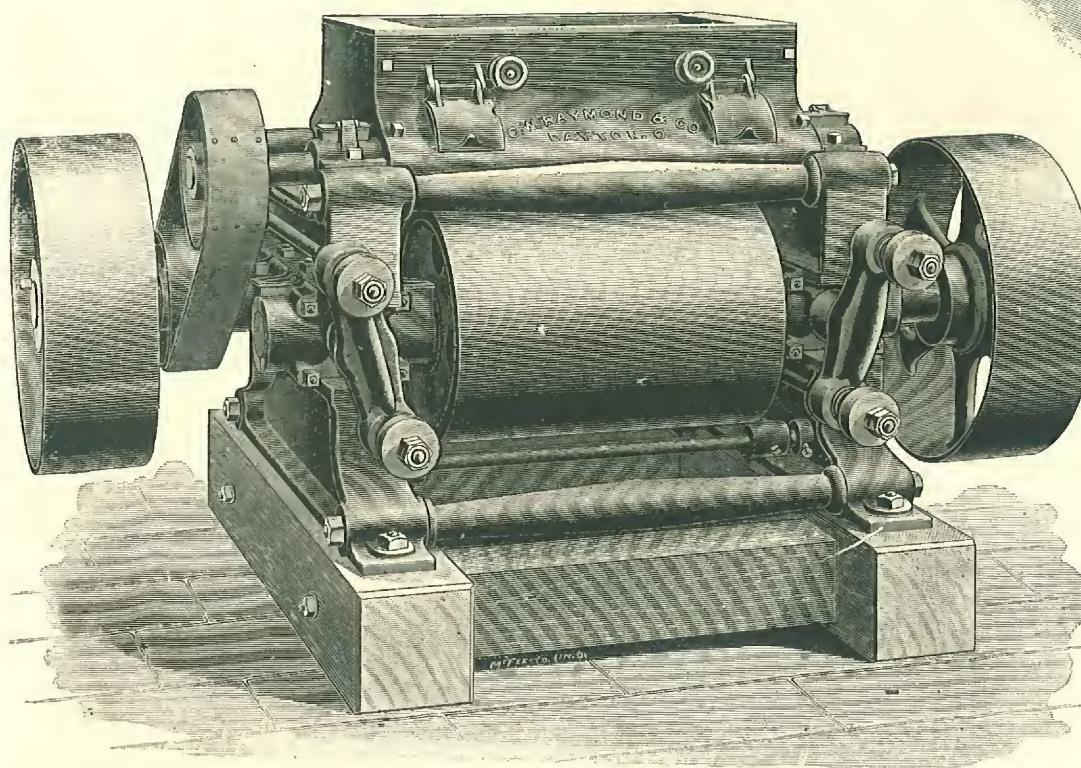


RAYMOND No. 20 SEPARATOR.

THE FEED ROLL is 18 inches diameter, 14-inch face. The Cutting Roll is 12 inches diameter, 14-inch face. The Shafts are of cast steel, 3 inches diameter, with bearings 10 inches long. The Driving Pulley of the Feed Roll is 24 inches diameter, 6-inch face, and should run 125 to 150 revolutions per minute. The Driving Pulley of the Cutting Roll is 12 inches diameter, 10-inch face, and should run 800 to 1,000 revolutions per minute. Approximate weight, 2,500 pounds. Capacity, 2,500 to 4,000 bricks per hour. Extreme dimensions are: Length, 4 feet. Width, 4 feet $10\frac{1}{2}$ inches. Height, 2 feet 10 inches.

RAYMOND No. 2 TAILINGS CRUSHER.

THE Rolls are 16 inches in diameter, 22-inch face, fitted on 3½-inch Cast Steel Shafts, the Bearings of which are 9 inches long. The Driving Pulleys are 24 inches in diameter, 8-inch face. The speed of Slow or Feeding Roll, 250 revolutions per minute. Will crush the tailings from 2,500 to 4,000 bricks per hour. Approximate weight, 4,500 pounds. Floor space required, 4 feet 6 inches by 6 feet.



Raymond Belt Clay Conveyors

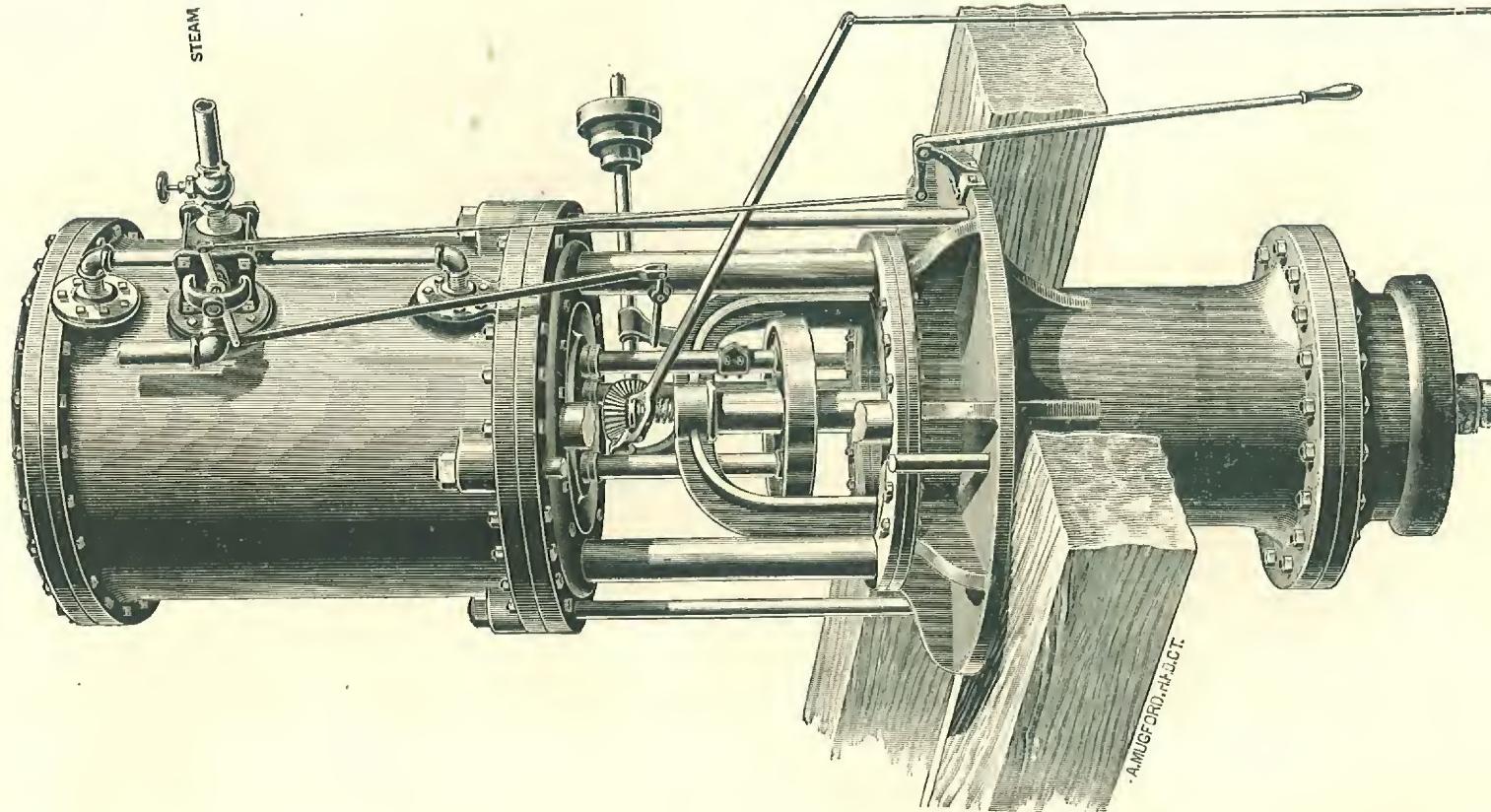
WE MANUFACTURE a most substantial Conveyor, using turned iron drums over which the Belt revolves. Take-up Boxes, by which the slack of the Belt is adjusted, and Side Dashes to prevent the clay from falling off.

The Belt travels over and is supported by Rollers its entire length, thereby avoiding friction.

Back Gearing is used on large size Conveyors. The best four-ply Rubber Belting is used.

Made in sizes from 16 to 30 inches wide, any length desired.

The Driving Pulley is 24 inches in diameter by 8-inch face, and should be run about 100 revolutions per minute.



RAYMOND SEWER PIPE PRESS.

Particulars furnished upon application.

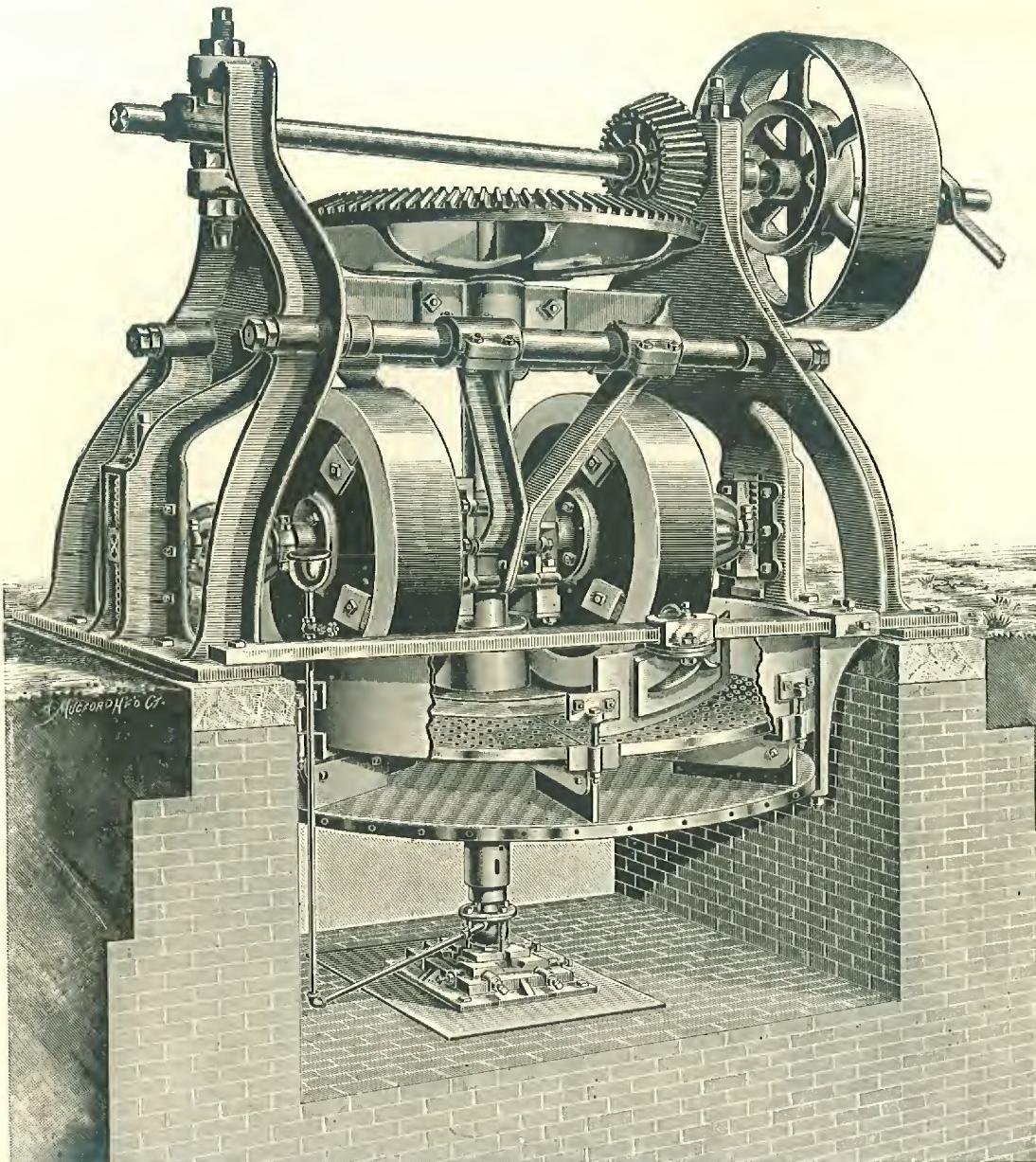


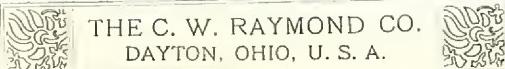
RAYMOND DRY PAN.

MADE in the following sizes: 9 feet diameter; 8 feet $7\frac{1}{2}$ inches diameter; 7 feet 6 inches diameter; 5 feet diameter.

When desired is furnished with wooden frame.

The marked improvements in this Dry Pan will be readily seen by reference to the specifications and the accompanying cut. Strength, rigidity and increased screening surface are prominent features. This pan is a late product, and is improved over everything now made.





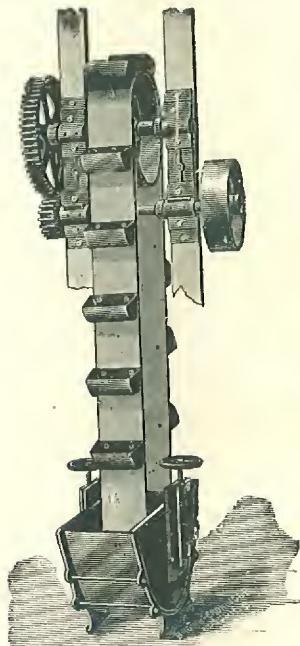
RAYMOND CUP ELEVATOR.

WE MANUFACTURE Bucket Elevators of any length and with any size bucket required.

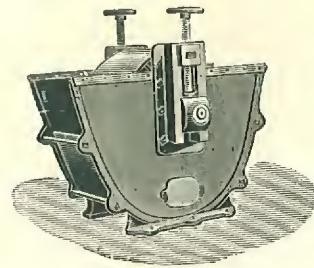
This cut shows Head and Boot with Belt and Cups attached, the upper part showing the Driving Gear, Shafts, Boxes and Pulley. The Boot has adjustable boxes by which the slack in the belt may be readily taken up.

The cups or buckets are steel and bolted to a superior quality of four-ply rubber belting.

Made with three size buckets, 8x5 inches, 10x6

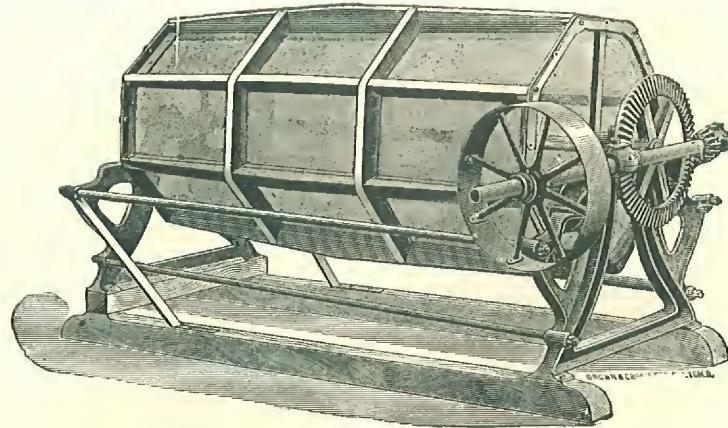


CUP ELEVATOR.



BOOT.

inches and 12x6 inches. Driving Pulley, 24 inches diameter, 8-inch face, and should run at 150 revolutions per minute.



RAYMOND OCTAGON REVOLVING SCREEN.

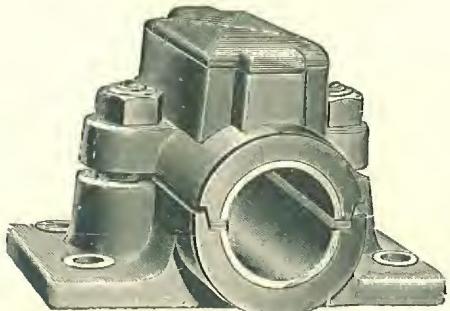
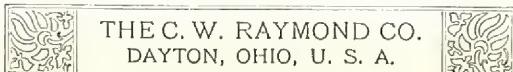
Our Screen, as shown by the accompanying illustration, is practically all iron.

The Bevel Gearing is placed at the discharge end and not at the receiving end, as with other Screens. By this arrangement the clay does not drop on them, causing wear and breakage. The Gearing is heavy, accurately fitted, and geared about 6 to 1.

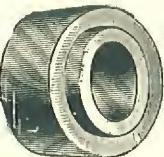
The Cylinder or Screen proper is 9 feet long, 40 inches diameter, with cast-iron heads at each end. Running lengthwise and terminating in pockets in these heads are heavy timbers, to which perforated steel Screen Plates are bolted. These Plates are made any mesh and gauge of steel and when worn they can be easily removed and new ones substituted. The entire inner surface of the Screen is smooth and free from any obstructions.

The Shaft is cast steel $2\frac{7}{8}$ inches diameter. A 32x8-inch Driving Pulley is used, and should run at 90 revolutions per minute. Weight, 2,200 pounds.

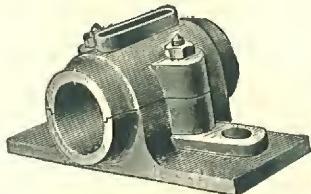
We furnish fixtures independent of the frame setting when required. Fixtures consist of Screen Cylinder and Shaft with two babbitted boxes for same; also Bevel Gears, Driving Pulley and Shaft, two babbitted boxes and two set-collars.



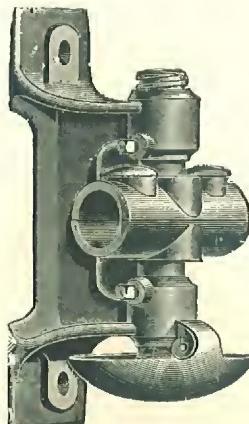
Pillow Block.



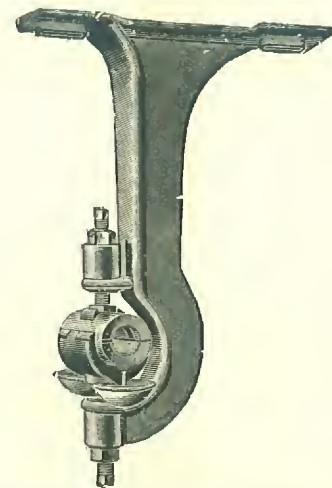
Set Collar.



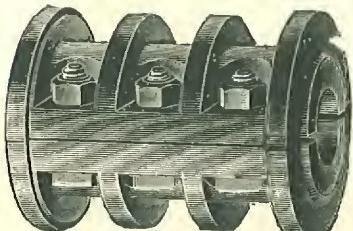
Common Flat Box.



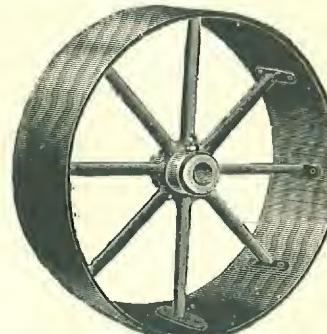
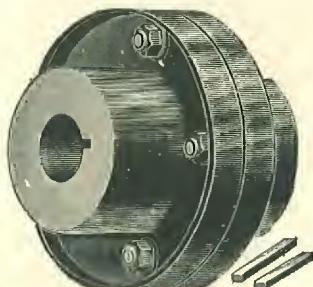
Post Hanger.



Single Brace Drop Hanger.



Compression and Flange Couplings.

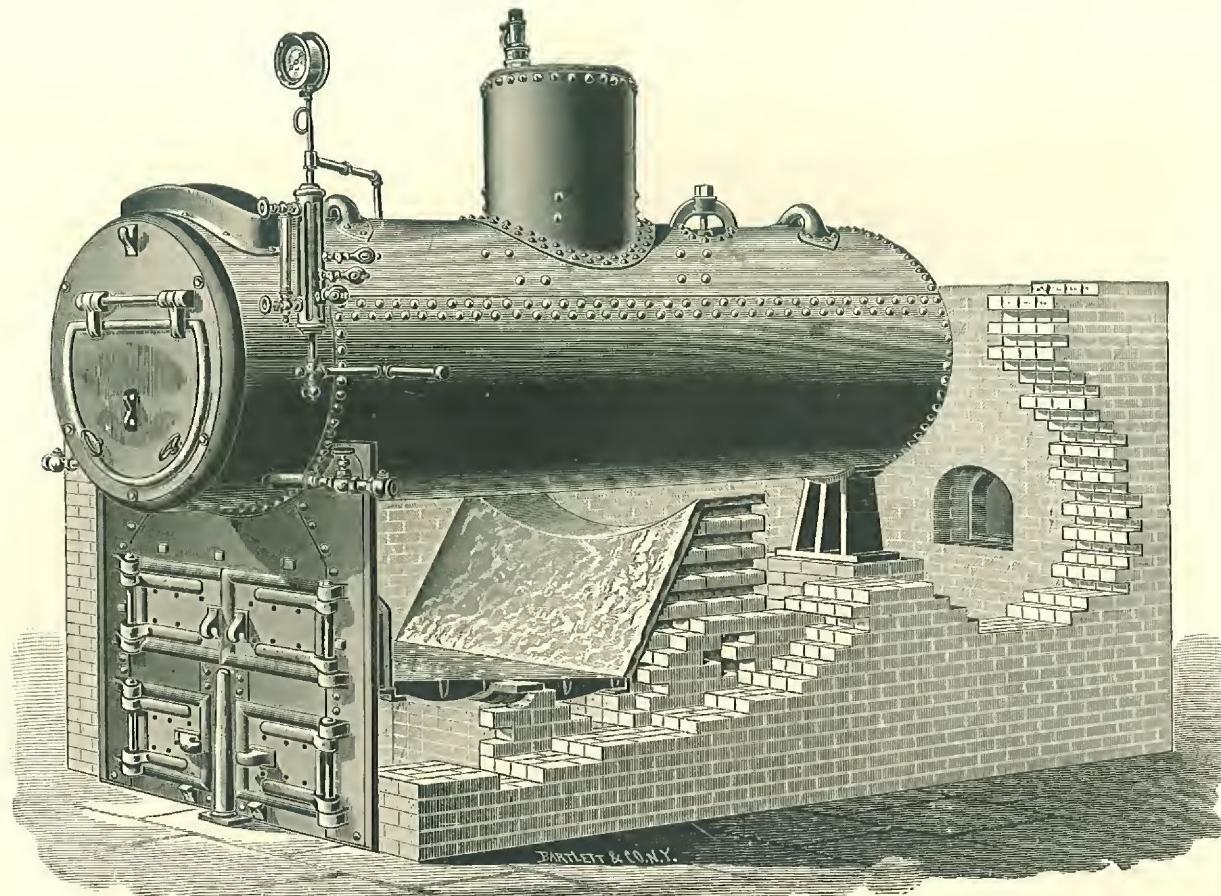


Patent Wrought Rim Pulley.

SHAFTING, PULLEYS, BELTING, ETC.

WE have a full line of Hangers, Pillow Blocks, Set Collars, Compression and Flange Couplings, Pulleys, Belting, etc., which we can ship promptly and guarantee to be fully equal to any of their class on the market.

Our patent Wrought Rim Pulleys are from 40 to 60 per cent lighter than those made of cast iron, for the same duty, and are very durable. We also furnish high-grade Belting, both leather and rubber, which we can ship promptly, and on which we can make the lowest quotations.



RAYMOND STANDARD TUBULAR BOILER.

RAYMOND STANDARD TUBULAR BOILERS.

WE HAVE THESE BOILERS IN STOCK, AND CAN USUALLY SHIP ON RECEIPT OF ORDER.



THE C. W. RAYMOND CO.
DAYTON, OHIO, U. S. A.

OUR "STANDARD" BOILERS are made throughout of open-hearth homogeneous flange steel plate, of 60,000 pounds tensile strength.

The bottoms are made entirely without seams except around the Heads. The advantages of this are apparent. There are no seams over the fire, and the bottom presents a smooth even surface, which greatly facilitates cleaning, prevents lodgment of sediment, and consequent burning of plates. The rivets are spaced in accordance with the most approved rules, and the greatest possible strength secured at the seams. Special attention is also given to bracing, which is a most important item in boiler construction.

All Boilers are tested and inspected before shipment by a responsible Steam Boiler Inspection and Insurance Company, and the purchaser given a certificate of inspection.

FIXTURES.

Fixtures for Standard Tubular Boilers comprise: Half Arch Front (with Double Fire and Ash Pit Doors, Heavy Dead Plate, Door Pockets and Fire Door Liners), Grates, Grate Bearers, Boiler Stand, Rear Arch Bars, Rear Ash-Door and Frame, Safety Valve, Steam Gage with Syphon, Water Gage with Stand Pipe fitted to Boiler, three Gage Cocks, Whistle and Pipe, Blow-off Valve, Check Valve, Stop Valve, Smoke Stack, Galvanized Wire Rope Guys (four times the length of Stack), and directions for setting. The above fixtures are sent when Boiler is ordered "as per list." Special price quoted on Full Arch Front or any other extras upon application.

SPECIFICATIONS OF STANDARD BOILERS.

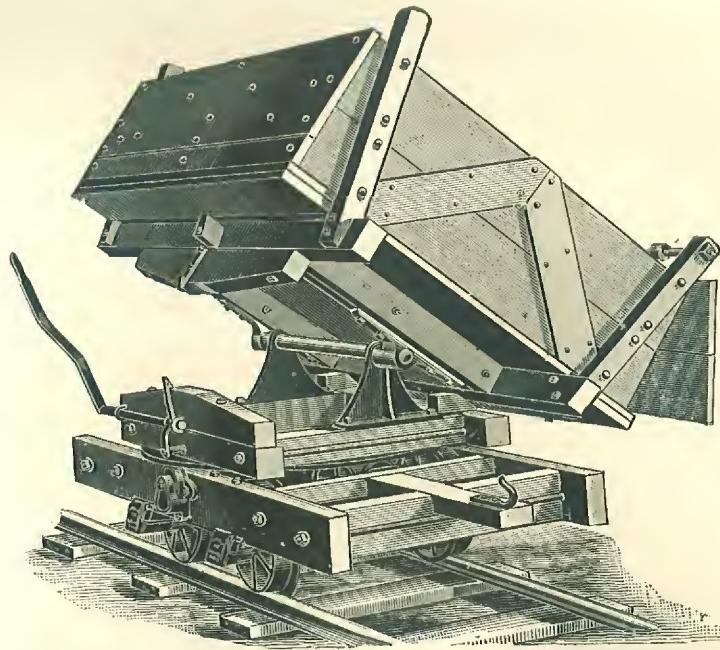
Number of Size.....	7	8	9	10	11	12	13	14	15	16	17
Horse Power, as usually rated.....	35	40	45	50	60	70	80	90	100	125	150
Diameter, in inches.....	44	48	48	54	60	60	60	66	66	72	72
Length of Tube, in feet.....	12	12	14	12	12	14	16	15	16	16	18
Number of Tubes, 3-inch diameter.....	46	52	52	64	82	82	82	98	98	120	84.4 in.)
Size of Dome, in inches.....	22 x 24	26 x 28	26 x 28	30 x 34	32 x 36	32 x 36	32 x 36	36 x 40	36 x 40	36 x 40	36 x 40
Thickness of Shell, in inches.....	$\frac{9}{32}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{11}{32}$	$\frac{11}{32}$	$\frac{11}{32}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{7}{16}$
Thickness of Head, in inches.....	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{7}{16}$	$\frac{7}{16}$	$\frac{7}{16}$	$\frac{7}{16}$	$\frac{7}{16}$	$\frac{7}{16}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{1}{2}$
Diameter of Stack, in inches.....	22	24	24	26	28	28	28	30	30	34	36
Length of Stack, in feet.....	40	40	50	40	40	50	60	60	60	60	60
Approximate Weight.....	7,600	9,400	10,300	11,400	13,000	14,400	16,000	17,700	18,000	22,000	23,500



RAYMOND AUTOMATIC DUMPING CARS.

THEY are undeniably the simplest-acting and most convenient Cars upon the market. By reason of their peculiar construction the preponderence of the weight is on the dumping side of the pivot bar when loaded and on the reverse when empty. Thus the weight of the load dumps the Car, and the weight of the empty bed returns it to position. It is required only to draw the lever to operate them, or, when convenient, a trip-bar placed in the track will accomplish the same result.

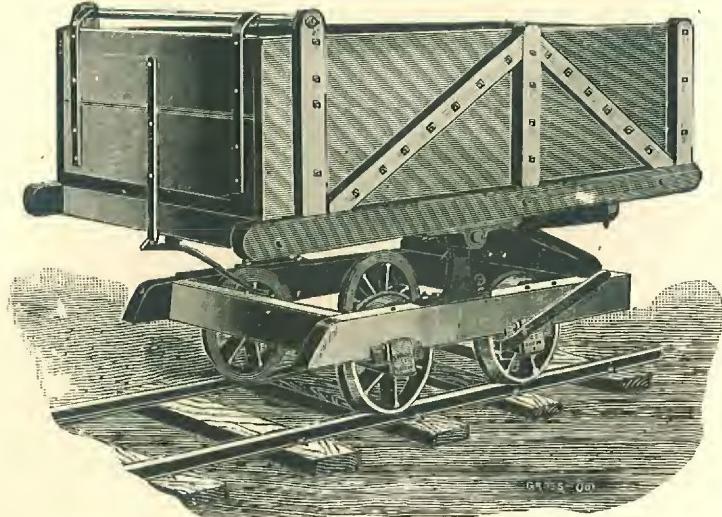
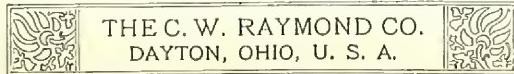
The entire Frame Work is made of selected white oak. The Sills of Bed are 3 x 4 inches, and of Truck, 3 x 6 inches. The Bed is lined with 1 1/4-inch oak. The Frame Work is mortised and bolted in the most rigid manner. The Axles are of steel, 2 inches in diameter, having turned Bearings, and are run in our Improved Self-Oiling Boxes. The Wheels are 14 inches high, 4-inch face, and are made of a special mixture of chill iron. They are lathe-bored, and compressed on the Axle by a compound screw press, which insures solidity, exactness, and, in all, easy running.



AUTOMATIC REVOLVING DUMPING CAR.

- No. 0. Two cubic yards capacity, 36-inch gauge.
- No. 1. One and one-half cubic yards capacity, 36-inch gauge.
- No. 2. One and one-quarter cubic yards capacity, 36-inch gauge.
- No. 3. One cubic yard capacity, 36-inch gauge.
Weight, 1,700 pounds.

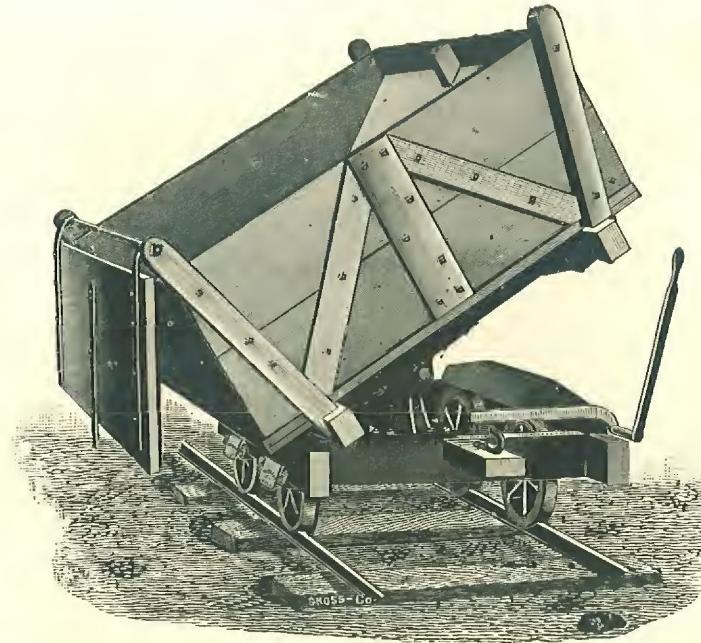
This Car we guarantee the most complete all-around Car on the market. Will dump on four sides. It has a center-pivoted Bearing. The Bed revolves upon a large Disc Wheel supported upon Rollers at its outer edges, avoiding all tendency to tip or strain in dumping. It possesses all the advantages of others of its class, besides being practically automatic.



AUTOMATIC END-DUMPING CAR.

THE average dimensions are: Length, 7 feet 8 inches; width, 4 feet 4 inches; height, 4 feet; weight, 1,400 pounds.

The End-Dumping Car is similar in all respects to the Side, except in its manner of dumping. It is especially adapted to dumping into pug mills, soak pits, and for other brick yard uses. It can be run singly or in trains, and is fitted for operation with the Winding Drums or teams.



AUTOMATIC SIDE-DUMPING CAR.

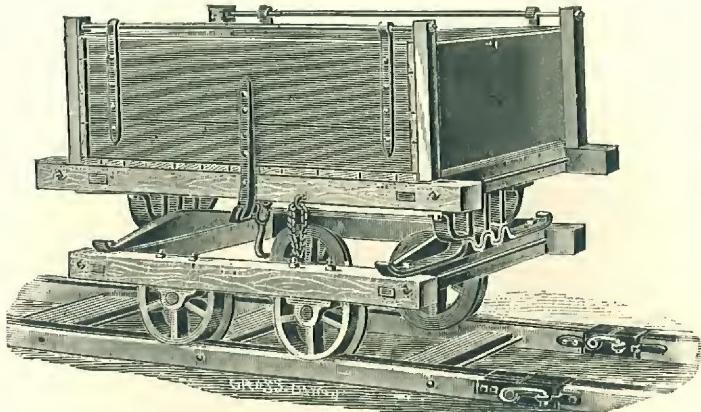
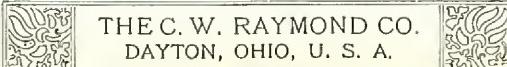
No. 0. Two cubic yards capacity, 36-inch gauge, 8 feet 8 inches long, 5 feet 11 inches wide, 4 feet 9½ inches high.

No. 1. One and one-half cubic yards capacity, 30-inch gauge, 8 feet 4½ inches long, 5 feet 6½ inches wide, 4 feet 8 inches high.

No. 2. One and one-quarter cubic yards capacity, 30-inch gauge, 8 feet 3 inches long, 5 feet 6 inches wide, 4 feet 6 inches high.

No. 3. One cubic yard capacity, 30-inch gauge, 8 feet long, 5 feet 5½ inches wide, 4 feet 2 inches high.

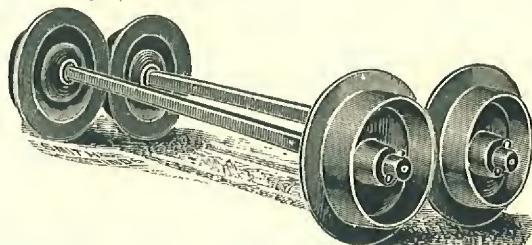
Average weight, 1,500 pounds.



ROCKER DUMPING CAR.

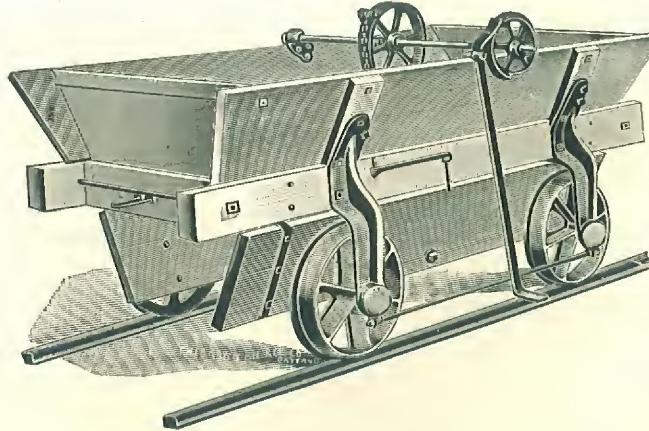
TO MEET the wants of those who have limited use for a Dumping Car we offer the above. While not as durable and convenient as the Automatic, it answers well for the ordinary work of brick-yard transportation. It dumps on either side, and can be drawn from either end. It is well built, and quite popular.

Bed is 6 feet 8 inches long by 3 feet 10 inches wide. Height from top of track to top of bed, 4 feet. Axles are steel, $1\frac{1}{2}$ inches in diameter. Wheels, 14 inches high by 3-inch face, of charcoal chill iron. Capacity, $\frac{3}{4}$ cubic yard. Weight, 900 pounds.



TRACK OR FLANGE WHEELS.

We make them in four sizes—6, 8, 10 and 12 inches. The Axles range from $1\frac{1}{2}$ to $1\frac{1}{2}$ inches square, and from 24 to 36 inches in length. Furnish with round axles if desired.

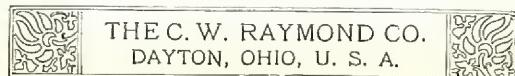


BOTTOM DUMPING CAR.

One of our latest inventions in Cars is the Automatic Bottom Dump. Its beauty of design stands out in bold relief when compared with others of this class. Especially noticeable is the absence of the usual "long lever" that whirls and endangers life and limb whenever the bottom dumps. It has no lever to whirl, and is set after dumping as easily as the hands of a clock.

The bottom is divided in the center and hinged on the outer sides. When the car reaches the dumping point, at which a trip has previously been placed, the bottom falls, allowing the load to pass between the wheels.

They are made in two sizes: No. 1, capacity 1 cubic yard; No. 2, capacity $1\frac{1}{4}$ cubic yards. Chilled Wheels are used. Gauge, 36 inches. Length over all, 7 feet 8 inches. Width over all, 4 feet 1 inch. Height from top of track to top of Bed, 3 feet 2 inches. Weight, 1,000 pounds.



SELF-CONTAINED WINDING DRUMS.

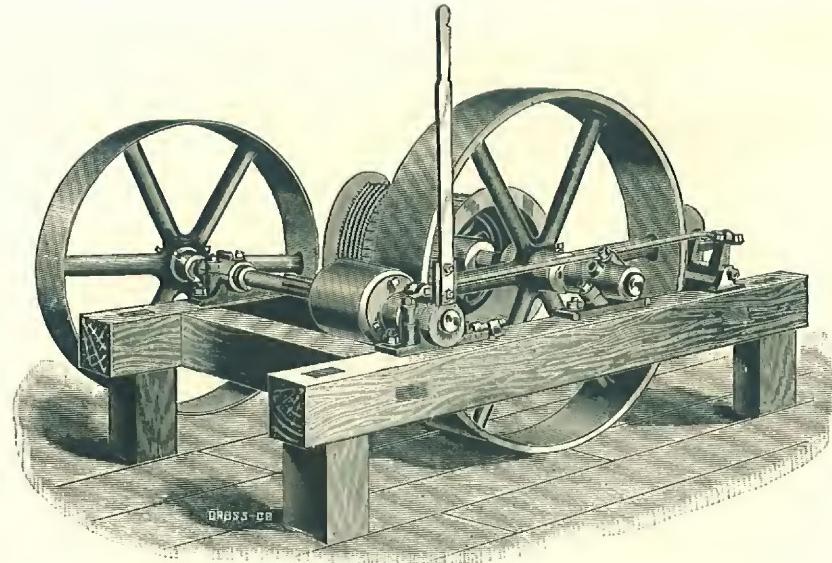
THE Self-Contained Winding Drum is strongly constructed on a 6x6 inch oak frame. It is furnished complete, as shown, ready to attach in any position desired. The Main Shaft, to which the Drum and large Friction Pulley are keyed, is 2½-inch steel. Counter-shaft, 2 inches. The Driving Pulley is 30 inches in diameter by 6-inch face, and should run about 150 revolutions per minute.

Cut No. 2 represents the Bevel-Geared Drum, for use where the track runs parallel with the Line Shaft. On this Drum the Driving Pulley is 20 inches in diameter by 6-inch face, and should run about 300 revolutions per minute.

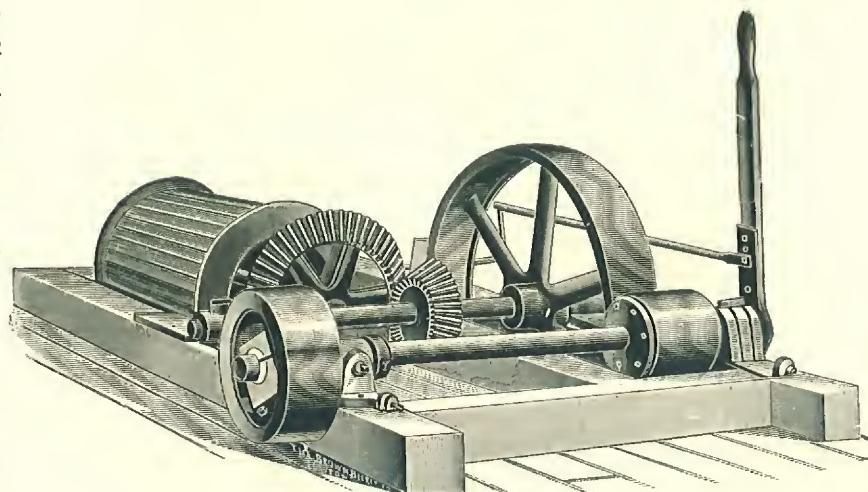
Both of the above Drums are made in the following sizes:

20x20 inch, 20x24 inch, 20x30 inch and 20x36 inch.

The No. 1 Self-Contained Drum weighs approximately 1,700 pounds, and the No. 2 Bevel-Geared Drum 1,900 pounds.



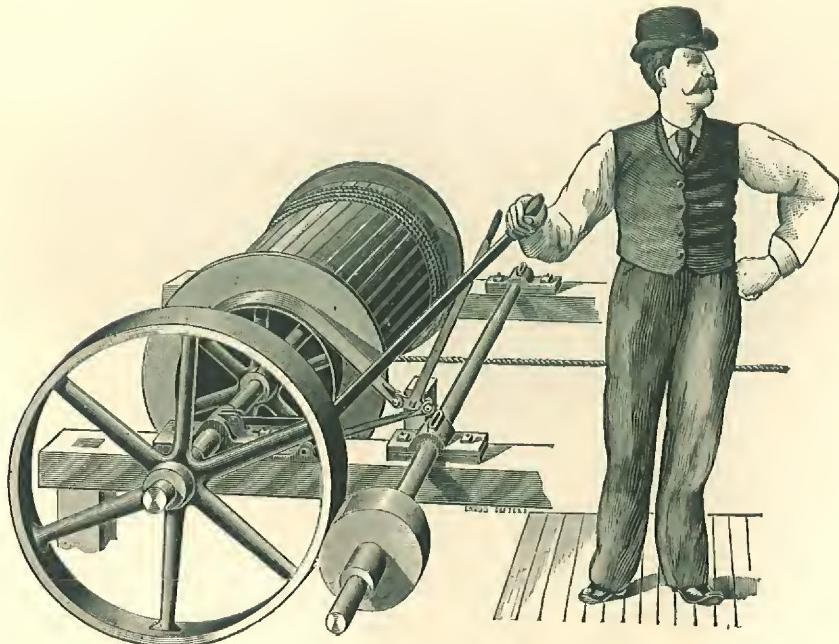
No. 1.



No. 2. Bevel-Geared.



THE C. W. RAYMOND CO.
DAYTON, OHIO, U. S. A.



WINDING DRUM FIXTURES.

WHERE it is possible to put the friction pulley on the line shaft the fixtures can be used. They comprise large drum and shaft, friction pulley, band brake, sliding box, stationary box, two set-collars and evers; also paper friction pulley, bored and key-seated to fit the line shaft.

Fixtures can be erected at any desired place. The cost is comparatively small. Made in four sizes, 20 x 20, 20 x 24, 20 x 30 and 20 x 36. In ordering this Drum, give the diameter of the line shaft.

Estimated Cost of Hauling a Distance of 1,500 Feet with Wagons Compared with Cars and Track.

WITH WAGONS.

Allowing 20 minutes for each trip	30 trips per day.
Say $\frac{3}{4}$ per cubic yard per trip, by 30 trips	22½ yards per day.
Required to haul 225 yards per day—10 wagons,	
\$3.50 per day	\$35.00.

Cost per cubic yard

15½ cents.

WITH TRACK AND CARS.

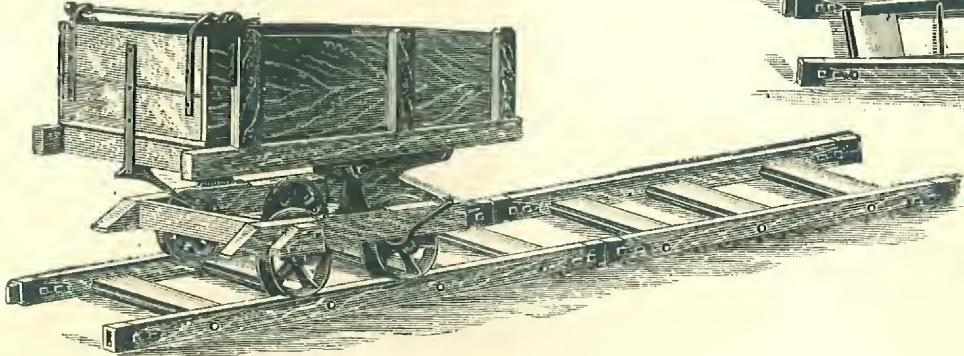
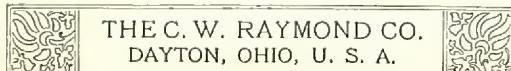
One team will haul 8 of our 1½ cubic yard cars this distance and back every 20 minutes	30 trips per day.
Twelve cubic yards per trip, by 30 trips	360 cu. yds. per day.
Cost of hauling	\$3.50.

Or less than one cent per cubic yard—a saving in favor of the cars of over \$50 per day. Ten days' saving will buy the entire train of eight cars.

Estimated Cost of Hauling Earth a Given Distance with Track and Cars.

Any contractor who adopts Cars and Portable Track, and will employ men enough to unload trains promptly, may safely calculate the entire cost of haul as follows, with two trains of four cars, 1½ yards each car, team travel estimated at 220 feet per minute:

Haul in Feet	Travel in Feet Round Trip	Time of Travel, Minutes	Time Dumping, Minutes	Time Consumed Each Trip	No. Trips in 10 Hours	No. Cubic Yds per Day, 8 Cars	Cost of 2 Teams per Day.	Cost of Haul per Cu. Yards, Cents
400	900	4 $\frac{1}{10}$	3	7 $\frac{1}{10}$	80	800	\$ 7 00	9 $\frac{1}{10}$
600	1300	5 $\frac{9}{10}$	3	8 $\frac{9}{10}$	60	600	7 00	1 $\frac{1}{2}$ $\frac{1}{10}$
800	1700	7 $\frac{7}{10}$	3	10 $\frac{7}{10}$	56	560	7 00	1 $\frac{3}{4}$ $\frac{1}{10}$
1000	2100	9 $\frac{5}{10}$	3	12 $\frac{5}{10}$	48	480	7 00	1 $\frac{5}{4}$ $\frac{1}{10}$



PORTABLE TRACK.

Section 12 feet long, with 24 to 36-inch gauge.

Section 14 feet long, with 24 to 36-inch gauge.

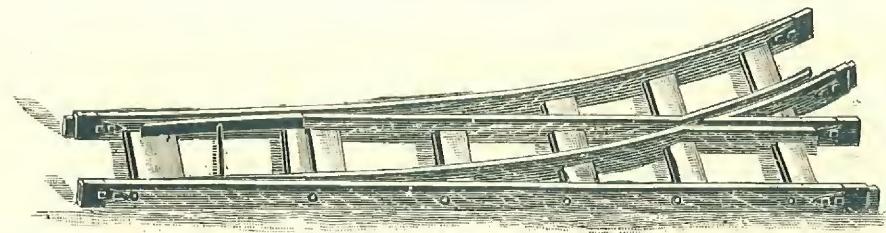
Section 16 feet long, with 24 to 36-inch gauge.

Section 18 feet long, with 24 to 36-inch gauge.

AN ARTICLE of great convenience to the brick-maker is Portable Track, made in sections with our Improved Locking Joints. All sections interchangeable. It is ironed on top with $1\frac{1}{2} \times \frac{1}{4}$ inch iron. Can be moved to suit the clay bank, taken up in winter, or transferred to any part of the yard at will. It is always ready for use.

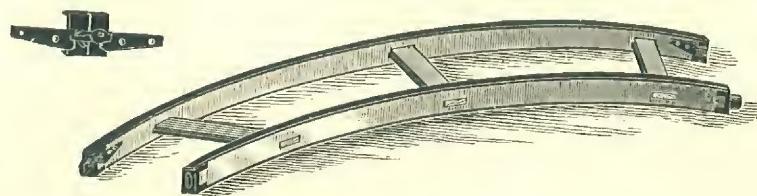
WIRE ROPE, T RAIL, ETC.

We are at all times prepared to quote low prices upon Wire Rope, Steel T Rail, Fish Plates, Spikes, etc.



SWITCHES.

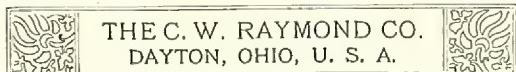
Length, 14 feet. Used in the clay bank. One car can be run aside to load while the other is being unloaded. Two switches with two sections of track make a turn-out by which the cars can pass each other in transit. Either right or left hand. They join with any section of track.



CURVES.

We manufacture Curves of any radius. Sections the same lengths as Portable Track. They join with any section.

IRON CARS AND DRYER EQUIPMENT.



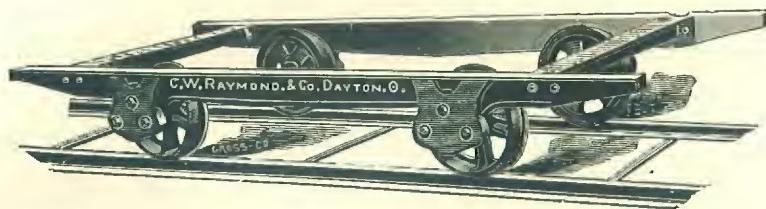
WE MANUFACTURE a full line of Iron Cars, Transfer Cars, Turn Tables, etc., for Artificial Dryers.

All are made of the best grades of gray iron heavily ribbed. All cars are provided with Anti-Friction Roller Bearings. The manner in which the Bearings are housed gives support to the Rollers on both sides and keeps them in line, thereby rendering the car easy of operation. The Wheels are lathe-bored and compressed on Turned Axles with a Compound Screw Press, which insures a true and perfect fit.

We make these cars of several different styles, a few of which are illustrated herein. It will be noticed that all cars illustrated have Cast-Iron Sides; however, when purchasers prefer them with Steel Sides, they are made accordingly.

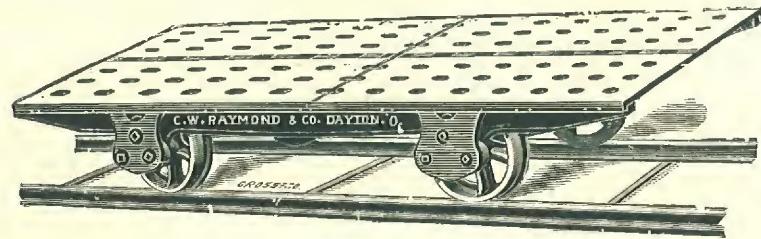
When cars are ordered we will, in the absence of instructions to the contrary, make the dimensions the same as those given in the description of the particular car ordered.

To insure the lowest freight rates all cars are shipped K. D.



CAR "A."

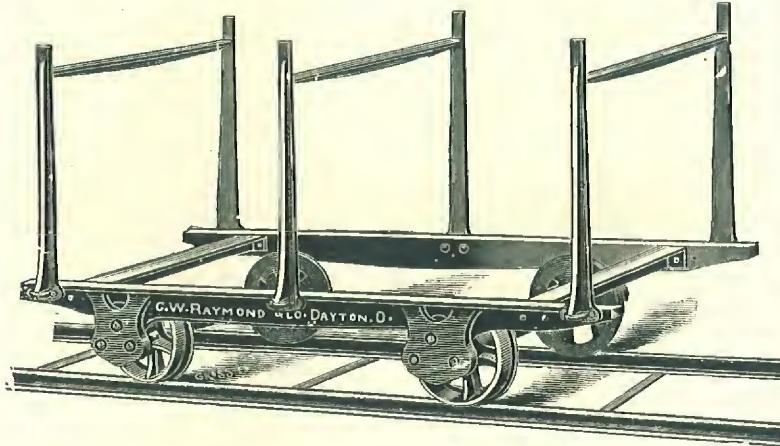
Eighty-five inches long, 34 inches wide, 24-inch gauge. Wheels are 12 inches high by 2-inch face. Axles are steel, $1\frac{1}{8}$ inches in diameter. For use with metal or wooden pallets. Weight, 330 pounds. Will hold 500 bricks. Furnished with Buffers when desired.



CAR "B."

This is the same as car "A," but supplied with a Cast-Iron Perforated Top, so that the bricks may be hacked directly on the car without the use of pallets. The Top is made of Cast Slats heavily ribbed on the under side to give strength, and to permit of the greatest possible circulation of air.

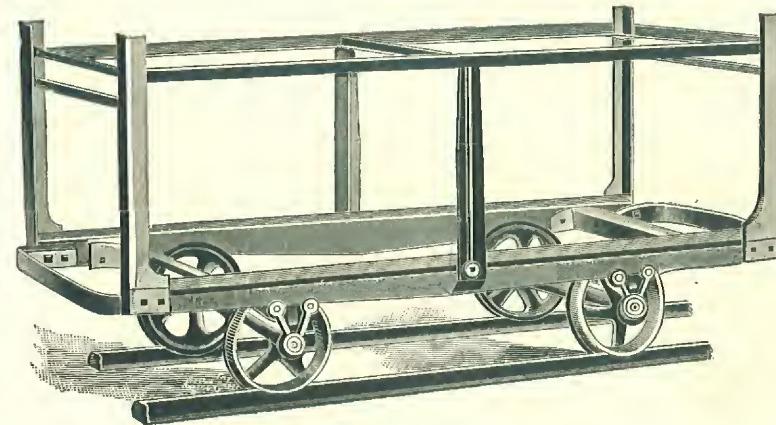
Weight of car, 330 pounds. Weight of Slats, 255, pounds.



CAR "C."

DOUBLE-DECK CAR for stiff mud bricks, made with either two or three uprights. Four courses of bricks can be hacked on lower deck and three courses on upper. Length, 84 inches; width, 34 inches; gauge, 24 inches. Wheels, 12 inches high by 2-inch face. Axles of steel, 1 $\frac{1}{2}$ inches diameter.

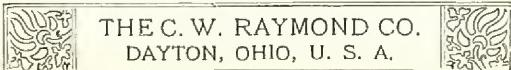
Furnished with Steel Sides when so specified.
Weight, 425 pounds. Will hold 550 bricks.



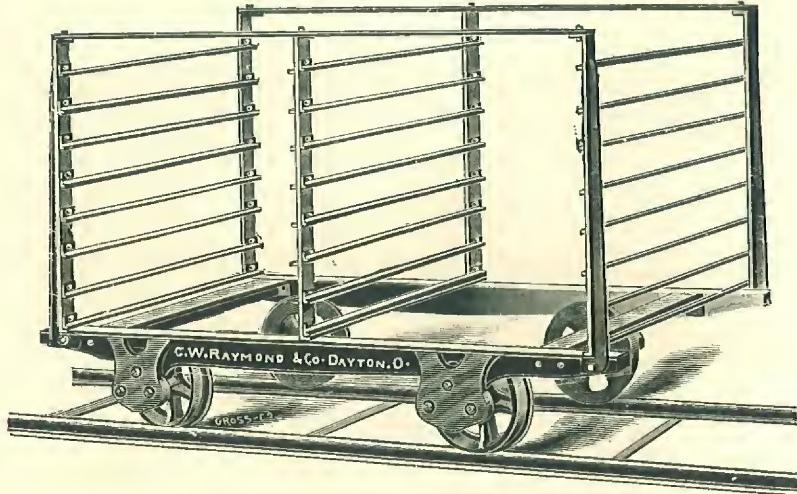
CAR "CC."

A Double-Deck Car for stiff mud, semi-dry or dry pressed brick. Four courses of bricks can be hacked on lower deck and three courses on upper.

Length, 84 inches; width, 34 inches; gauge, 24 inches. Wheels and Axles same as Car "C."



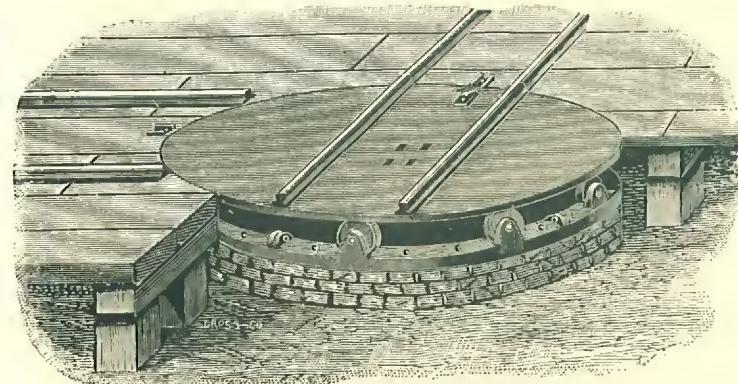
THE C. W. RAYMOND CO.
DAYTON, OHIO, U. S. A.



CAR "D."

RACK CAR for soft mud brick used with either wood or metal pallets, dispensing with the foot pieces.

Height from top of track to top of car, 5 feet $2\frac{1}{2}$ inches; width, 34 inches; gauge, 24 inches. Wheels and Axles same as Car "C."

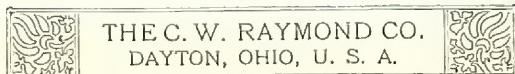


TURN TABLES.

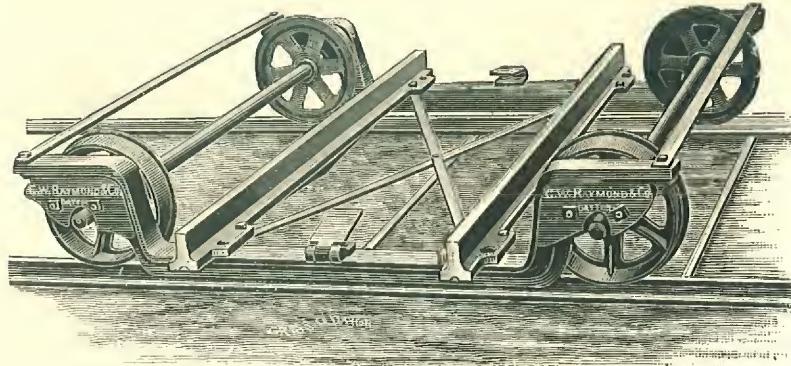
No. 1. Weight, 350 pounds. Diameter, 4 feet.

No. 2. Weight, 400 pounds. Diameter, 4 feet 8 inches.

We make a strong and convenient appliance which can be turned with loaded cars by one man. The Disc Plate is cast steel, has a center-pivot bearing, and is supported at the outer edge by eight wheels. It is provided with Locks and Stops. Can be used as a Portable Turn Table at the kiln or at the clay bank for dumping cars. The top can be separated from the bottom by simply lifting it from position.

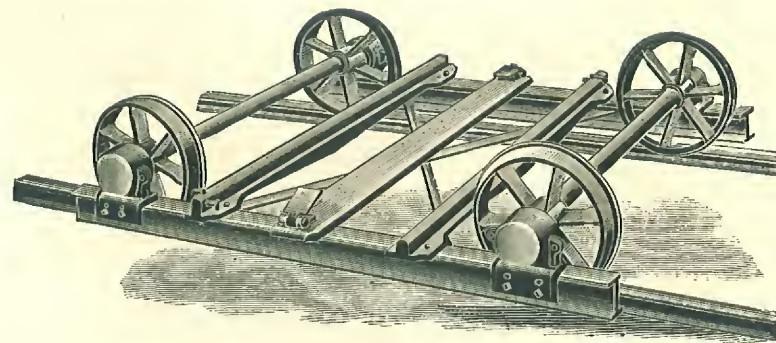


TRANSFER CARS.



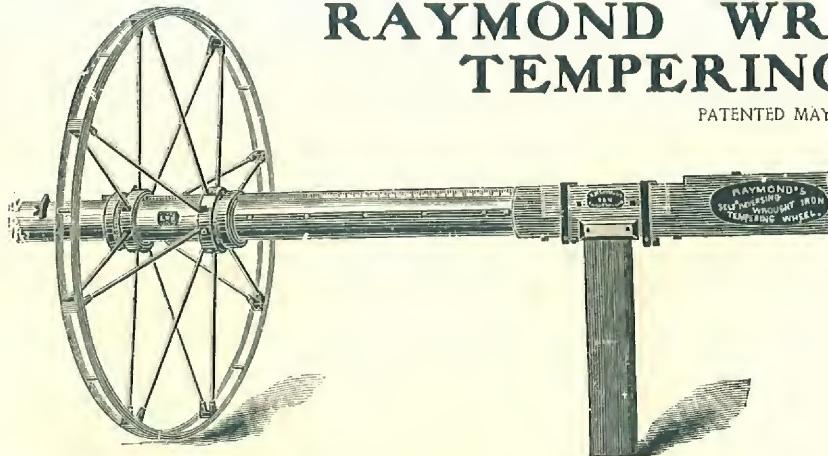
No. 1.

THIS CAR is strong, thoroughly braced, and runs on Roller Bearings. Wheels are 14 inches high. Axles, $1\frac{3}{4}$ inches in diameter. Lower Gauge, $49\frac{3}{4}$ inches. Length of Rail, 5 feet $8\frac{1}{2}$ inches. Upper Gauge, 24 inches. Height of Rail on top above the track, 6 inches. Weight, 600 pounds.



No. 2.

Sides of Steel I Beams. Wheels are 14 inches high, 3-inch face. Axles, $1\frac{3}{4}$ inches in diameter. Upper Gauge, 24 inches. Lower Gauge, 45 inches. Length of Rail, 5 feet. Weight, 700 pounds. This is without doubt the strongest and best Transfer Car on the market. Made either single or double.



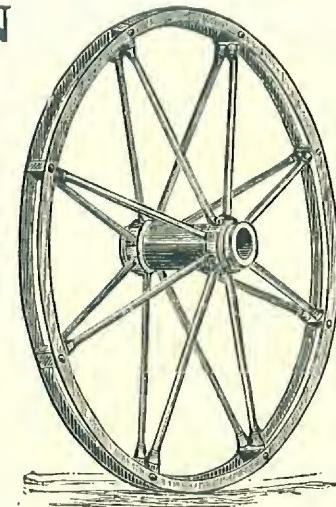
RAYMOND WROUGHT IRON TEMPERING WHEEL.

PATENTED MAY 18, 1880.

The following sizes and weights are kept in stock. Special weights made to order. The 6-foot Wheel (standard) is always sent when no other size is ordered.

WEIGHTS.

	Weight About
6-Foot Wheel, complete.....	650 lbs.
6-Foot 6-Inch Wheel, complete..	700 lbs.
7-Foot Wheel, complete.....	750 lbs.



THE C. W. RAYMOND CO.
DAYTON, OHIO, U. S. A.

future work upon the brick, hence well-tempered clay must be of the first importance to the brick-maker.

The Wrought Iron Wheel represents a combination of mixing and tempering parts not found in any other machine or wheel. Besides working the mud between the tires, there are sixteen spokes performing a like office of tempering, and a pit of mud containing 10,000 bricks, operated upon for about one hour, is ready for the work of the molder. As a mixer for all kinds of clay the Wrought Iron Wheel is without an equal. By its use perfect tempering is always assured.

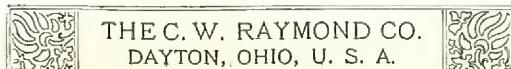
The Wrought Iron Wheel is operated in a pit by either steam or horse power. By an automatic arrangement of the Rod and Pinion the Wheel is drawn back and forth on the Shaft, changing its position with each revolution, and reversing itself both at the outer and inner edge of the pit. It consists of a Wheel, Shaft, Rod, Pinion, Mud Bands, Post Plates, Spikes, etc., for operating four pits.

We have spared no expense in making them the most substantial and complete mud temperers known.

CONSTRUCTION OF PIT.

Diameter of Pit for 6-foot Wheel.....	18 feet 6 inches
Diameter of Pit for 6-foot 6-inch Wheel...	19 feet
Diameter of Pit for 7-foot Wheel.....	19 feet 6 inches

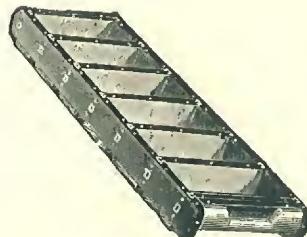
Throw out all the dirt to the depth of 18 inches. Plant a center post firmly in the ground, the braces not to extend over 18 inches either way from the post. The size of post 8 x 8 oak or the butt of a small tree. Lay a floor of 1-inch boards in the bottom, leaving the ends extend into the bank or sides to hold them in place. Saw off center post, for 6-foot wheel, 2 feet 8 inches; for 6-foot 6-inch wheel, 2 feet 11 inches; for 7-foot wheel, 3 feet 2½ inches above the floor of the pit.



SETTING UP AND OPERATING TEMPERING WHEEL.

REMOVE the lid, clamps and wheel-stop; slip the rod out to the pointed end of the shaft and put both rod and shaft through the hub of the wheel until the notched part of the rod sets firmly up against the pinion head. Put the wheel-stop on exactly where it came off. Grease all wearing parts well with clean lard and try it in an empty pit. If all right, put on the clamps and lid, and you are ready for a season's work. See that the center post is of sufficient height that the shaft will set exactly or nearly level when in position to work. Do not allow the center to collect too much mud, as it impairs the progress of the wheel. Always keep the groove in the shaft clean, in order that the rod may slip freely and perform its work without hindrance.

BRICK MACHINE MOLDS.



Made of best quality of cherry wood, with side pieces $\frac{3}{8}$ inch thick. Partitions and bottoms $\frac{9}{16}$ inch thick, and bound with No. 12 steel, extending entirely around the mold. Weight, about 12 pounds each. In ordering Machine Molds, give exactly the size of the molded bricks, number of bricks in each mold, thickness of partition, and total length of mold.

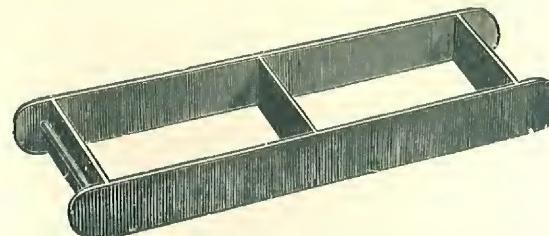
HAND MOLDS.



Two Bricks, Three Bricks, Four Bricks and Six Bricks.

The side pieces are $\frac{13}{16}$ inch thick. Partitions, $\frac{3}{8}$ inch thick. Bottoms, $\frac{9}{16}$ inch thick. They are bound with No. 12 steel.

STEEL AND BRASS MOLDS.

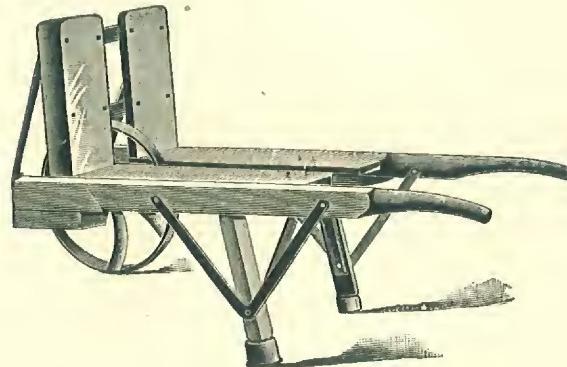
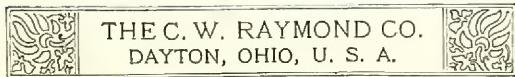


Two Bricks, Steel; Three Bricks, Steel; One Brick, Brass; Two Bricks, Brass.

The Steel or Brass Mold is almost indispensable for making a fine-face brick for re-pressing. We make them to order on short notice.

SHAPE MOLDS.

Shape molds are made by placing blocks, corresponding to the shape of the brick required, in the regular mold. A small additional cost per mold, extra, depending upon the shape.



No. 1 BRICK BARROW.

MADE from the best seasoned white oak. Frame mortised throughout. Legs and Front braced and cross-braced underneath. Iron Wheel and Axle. It is so adjusted that the wheel carries the entire weight of the load. For strength and durability it has no equal. One of our largest buyers writes: "Beyond question the 'ideal' Brick Barrow."

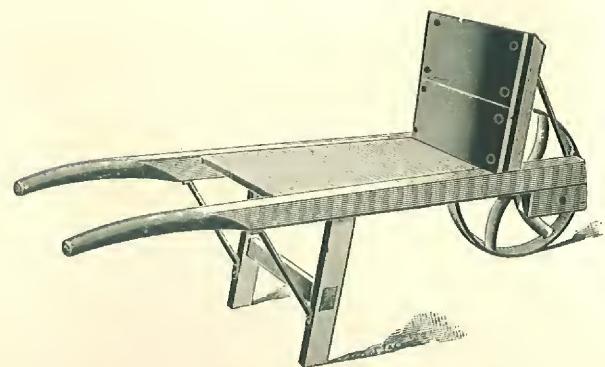
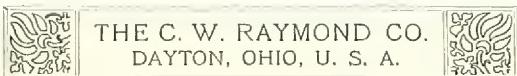
Weight, 89 pounds.



No. 2 SPRING BARROW.

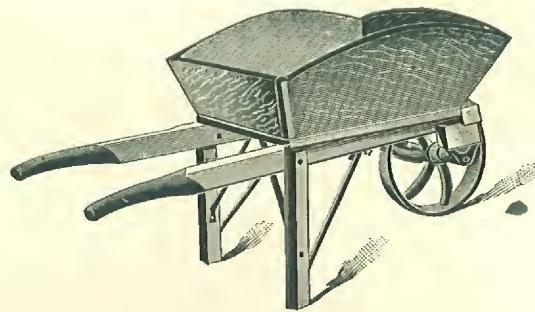
FOR handling green or re-pressed brick. For pressed brick, where it is desired to preserve the fruits of re-pressing, we would undoubtedly recommend the Spring Barrow, as the danger of defacing the bricks by jarring is obviated. Iron Wheels, Axles and Bearings. Three-leaf tempered Steel Springs. Very durable.

Weight, 110 pounds.



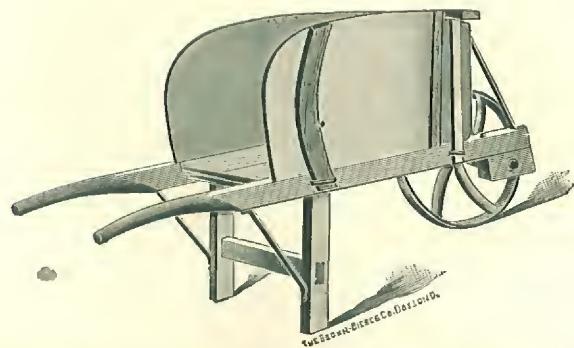
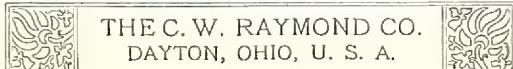
No. 3 MUD BARROW.

INTENDED for wheeling mud. It has an inclined front by which the load is brought well over the wheel. Is short and wide. Built very strong. Weight, 87 pounds.



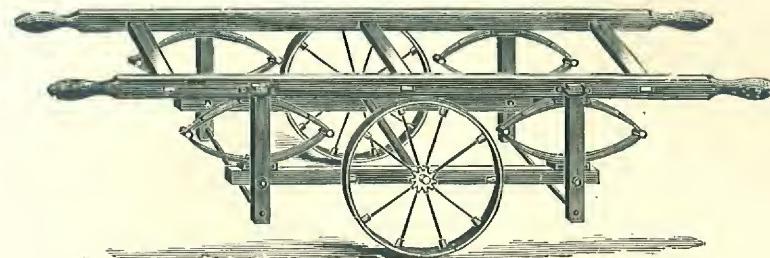
No. 4 DRY DIRT OR SAND BARROW.

For dry dirt or sand. We make a much stronger Barrow for this use than is ordinarily sold. This Barrow is well braced, and ironed on top. Will furnish with steel tray when so desired. Weight, 80 pounds.



No. 5 SIDE-BOARD BARROW.

THIS BARROW is substantially built, thoroughly braced, and well painted. It can be used either with or without the side-boards. It is a convenient Barrow for general use around the yard. Weight, 110 pounds.

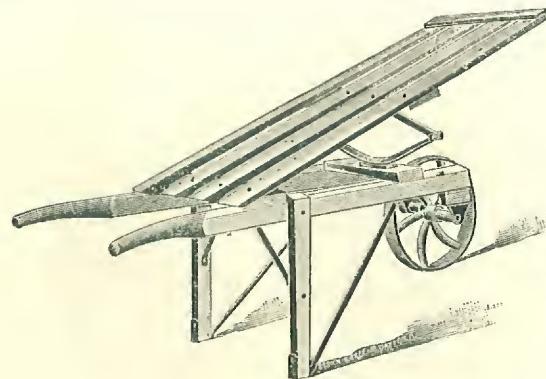


No. 0 OFF-BEARING TRUCK.

The Truck here shown is very popular. It carries double the amount of bricks of any other, and the entire load rests on the wheels. It can be wheeled from either end, hence one boy with this Truck can do the work of two men with others. With flat top, it makes an excellent Truck for tile yard; or slatted, is invaluable for use with dry press.

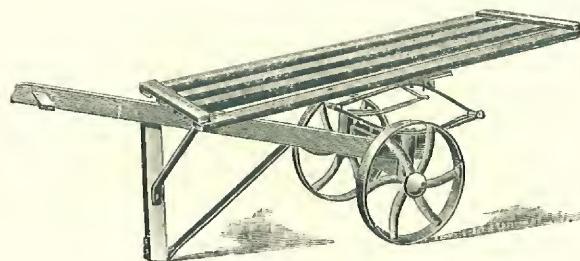
The Wheels are Wrought Iron, and work on Turned Axles.

It has four Springs. Length, 10 feet. Width, 23 inches. Height, 28 inches. Weight, 170 pounds.



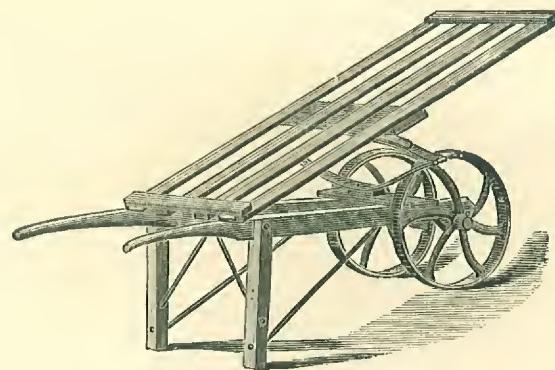
No. 1 OFF-BEARING TRUCK.

WITH one Wheel and one Spring, light and strong, well braced. Iron Axle and Bearings. Wide Tire, and will not cut the yard. Is preferred by many on account of the "barrow" shape of the handles. The No. 1 is in great demand. Will carry six molds or pallets. Weight, 79 pounds.



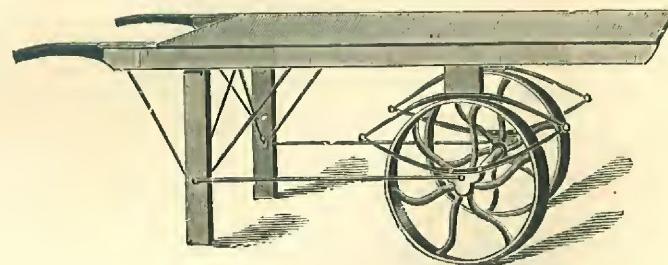
No. 2 OFF-BEARING TRUCK.

With one Handle, two Springs and two Wheels. A very popular Truck, as it combines special features of the other two. Is comparatively light and convenient to handle. Will carry six molds or pallets. Weight, 103 pounds.



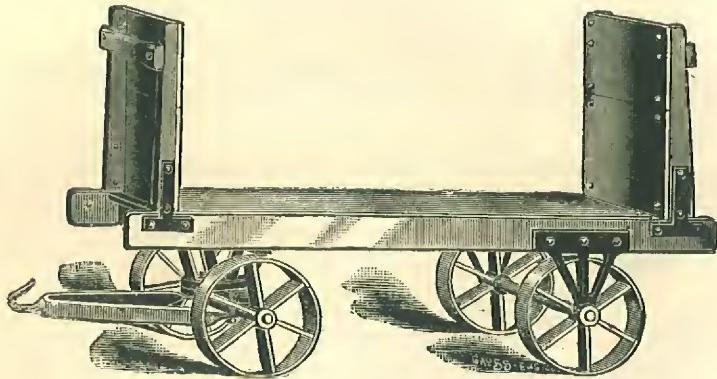
No. 3 OFF-BEARING TRUCK.

THE design here presented maintains the same barrow shape to the Handles as No. 1. It has two Wheels which operate on Turned Axles. It is substantially made and well braced. It turns corners quickly, and will not easily upset. Will carry six molds or pallets. Weight, 108 pounds.



PLATFORM TRUCK.

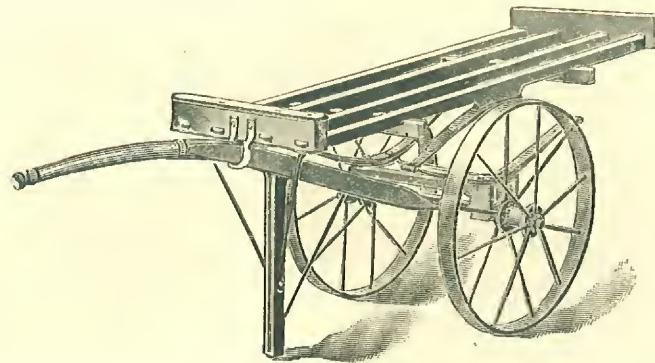
This Truck is made with or without Springs, either with Closed Top for face brick, as shown, or open for hauling pallets from the machine. It is well built, and runs easy. Weight, 140 pounds.



MULE TRUCKS.

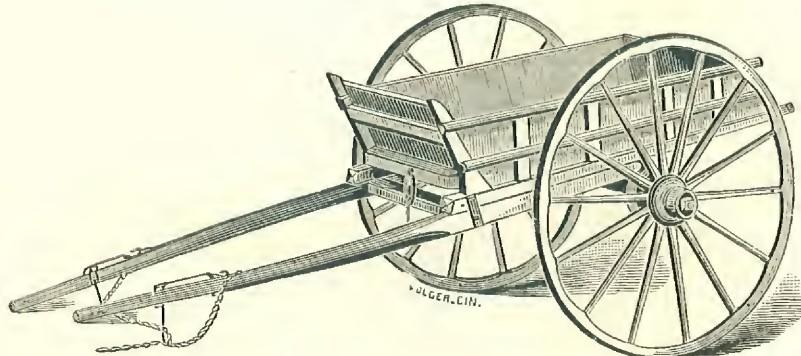
For Hauling Dry Bricks from Yard to Kiln.

THESE TRUCKS are a great improvement over hand wheeling. Three compose one set; one being at the racks loading, one hauling from the yard to the kiln, and one at the kiln being unloaded. Platform, 30 x 78 inches. Wheels, 18 inches high, 4-inch face. Hold 500 bricks each. Weight, 350 pounds.



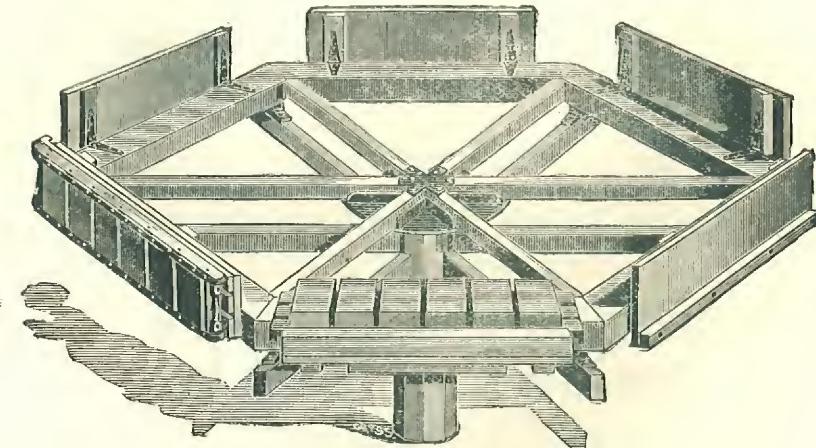
DRY PRESS TRUCKS.

The above Truck is handy for most any kind of trucking. They are made strictly of first-class material. Wheels, 26 inches high, 2-inch face, run on Turned Axles. Platform, 18 inches wide by 56 to 64 inches long. Weight, 115 pounds.



THE STANDARD DUMP CART.

WE MAKE a specialty of this Cart for brick-yard use. The great demand during the past season attests their popularity. They are light and very strong; they dump easily, can be handled by a boy, made from the best of seasoned white oak, thoroughly ironed and well painted, $3\frac{1}{2}$ thimble-skein axle, and 2-inch tire. Weight, 700 pounds.

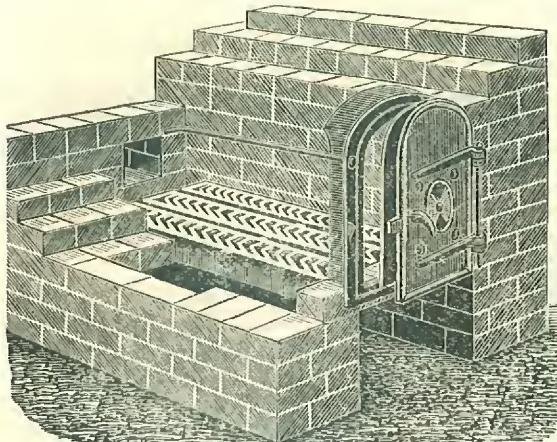


REVOLVING DUMPING TABLE.

The Revolving Dumping Table is adapted to the pallet system of making bricks. The one shown revolves easily, is strong and durable. To avoid frequent stoppages of the brick machine the Revolving Table is indispensable. When the truck men are delayed from any cause the dumpers have several boards to work upon.

KILN DOORS, KILN CASTINGS, ETC.

THE C. W. RAYMOND CO.
DAYTON, OHIO, U. S. A.



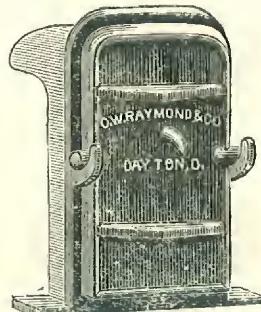
Shows our Kiln Door and Grate Bar as Set in Arch.

KILN DOORS.

The Kiln Door is an item of economy, as it saves fuel and facilitates the work of burning. We keep in stock the four styles illustrated in this catalogue. These are in most general use. Other styles of doors made to order.

No. 5.

The door here shown is commonly used for burning wood. The door is independent of the frame, and can be easily lifted therefrom. It has a ventilator in the center and heavy cross ribs on the inside, not shown in the cut. The frame extends well into the arch. Opening, 12 x 20 inches. Weight, 80 pounds.

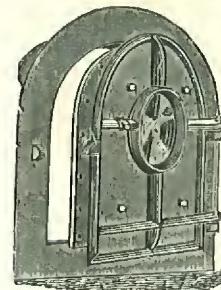


No. 5.

We manufacture a most complete line of Kiln Doors and Kiln Castings of all kinds. We use the very best grade of gray iron. Our facilities for the rapid execution of foundry work are unsurpassed, hence orders in that line can be filled with unusual promptness. Special prices on large quantities of castings.



No. 10.
Round Top—Heavy.



No. 15.

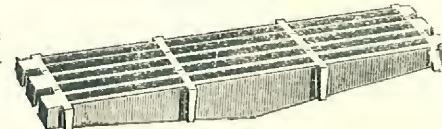
Opening, 12 x 14.
Weight, with Liner, 60 lbs.
Weight, Plain, 50 lbs.

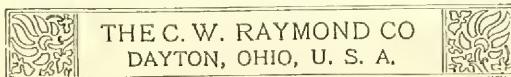
The above two doors are preferable with liner plates, as these afford complete protection to the door, and, if burned out, can be renewed at a small cost.

REGULAR GRATE BARS.

We keep in stock and can usually ship promptly regular Grate Bars as follows:

LENGTH	WIDTH	ESTIMATED WEIGHT
3 Feet	2½ Inches.....	26 Pounds
3 Feet 6 Inches.....	2½ Inches	30 Pounds
4 Feet.....	2½ Inches.....	35 Pounds





STREET PAVING BRICK.

Specimens of Vitrified Street Paving Brick made on Raymond's Victor and Columbian Automatic Power Presses. The figures given are the burned sizes.



$8\frac{1}{2} \times 4\frac{1}{8} \times 2\frac{1}{4}$



$8\frac{5}{8} \times 4\frac{1}{4} \times 2\frac{1}{2}$



$9\frac{1}{4} \times 4 \times 3\frac{1}{4}$



$9 \times 4 \times 3$



$8\frac{1}{2} \times 4 \times 3\frac{1}{2}$



$8\frac{3}{4} \times 4\frac{3}{8} \times 2\frac{1}{4}$



$10\frac{1}{4} \times 4\frac{1}{8} \times 3\frac{3}{8}$



$8\frac{3}{8} \times 4\frac{1}{8} \times 2\frac{5}{8}$



$8\frac{1}{4} \times 4 \times 2\frac{5}{8}$

SIDEWALK PAVING BRICK.

Sidewalk Paving Brick in endless variety can be made on Raymond's Perfection Hand Presses and Victor and Columbian Automatic Power Re-presses. The figures given are the burned sizes. Dies of any configurations made to order.



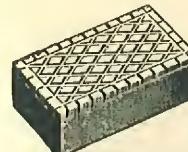
No. 1. $8\frac{1}{4} \times 8\frac{1}{4}$



No. 2. $8\frac{1}{4} \times 8\frac{1}{4}$



No. 3. 10×5



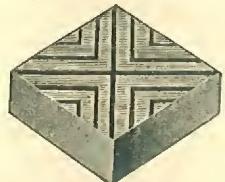
No. 4. 10×5



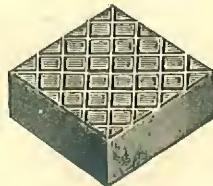
No. 5. 10×5



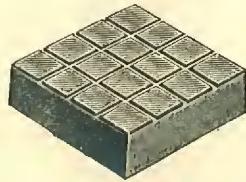
No. 6. $8\frac{1}{4} \times 8\frac{1}{4}$



No. 7. $8\frac{1}{4} \times 8\frac{1}{4}$



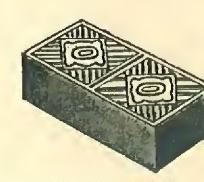
No. 8. $8\frac{1}{4} \times 8\frac{1}{4}$



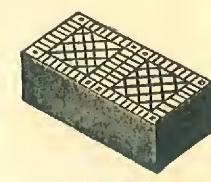
No. 9. $8\frac{1}{4} \times 8\frac{1}{4}$



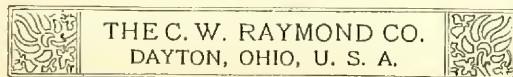
No. 11. $8\frac{1}{4} \times 8\frac{1}{4}$



No. 17. 10×5

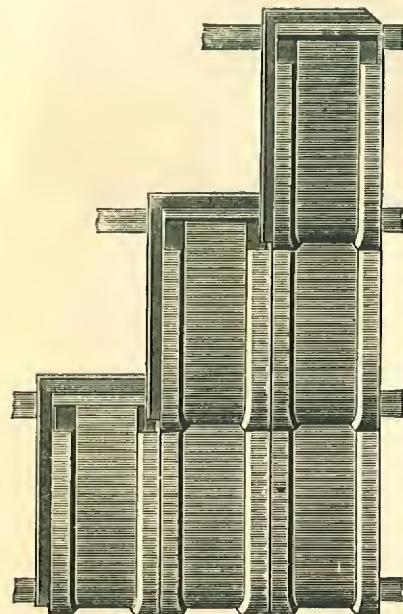


No. 18. 10×5

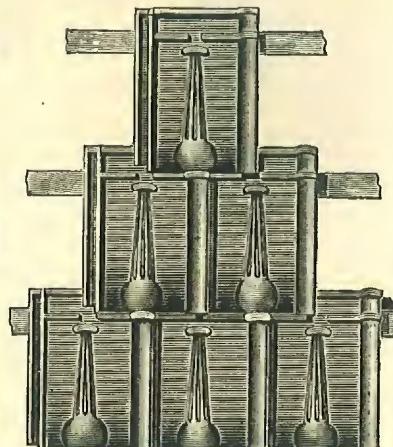


ROOFING TILE.

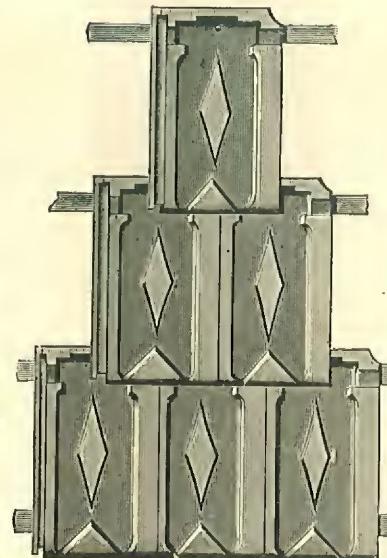
Made on Raymond's No. 3 Perfection Press, shown on page 35. The figures given are the burned sizes.



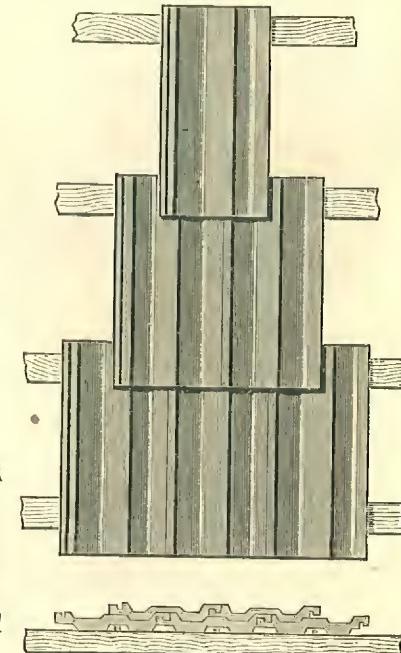
Style A. $16 \times 9\frac{1}{2}$



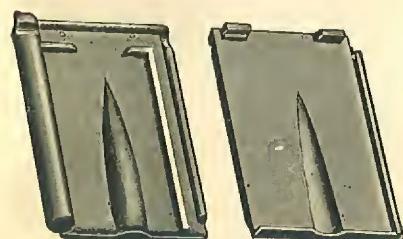
Style B. $10\frac{1}{4} \times 8\frac{5}{8}$



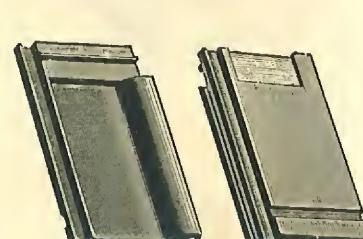
Style C. $12\frac{1}{4} \times 8\frac{1}{2}$



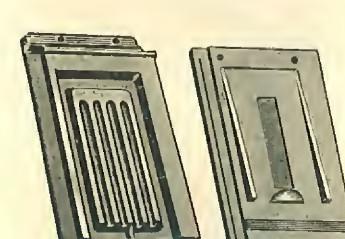
Style D. $16 \times 9\frac{1}{2}$



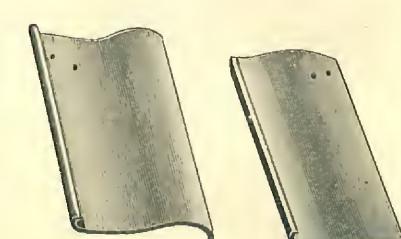
Style E. $10\frac{1}{4} \times 8\frac{5}{8}$



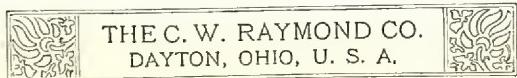
Style G. $9\frac{1}{4} \times 7$



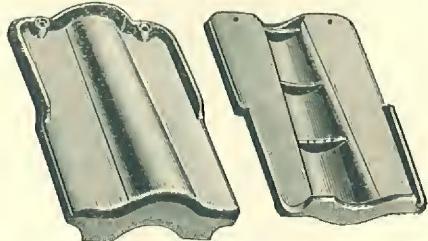
Style F. $9\frac{1}{4} \times 7$



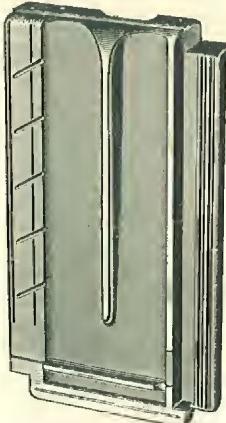
Style H. $12 \times 8\frac{1}{2}$



ROOFING TILE—Continued.



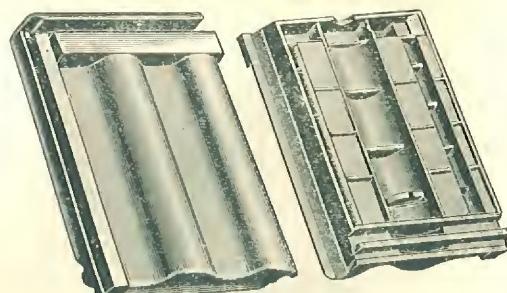
Style I. $12\frac{1}{4} \times 8\frac{1}{4}$



Style J. $16 \times 9\frac{1}{2}$

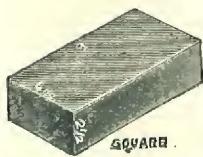


Style K. $13\frac{1}{2} \times 11$



FIRE BRICK.

Fire Brick (9-inch series) made on Raymond's Perfection, Victor, or Columbian Re-Presses.



SQUARE.



CHECKER



SPLIT



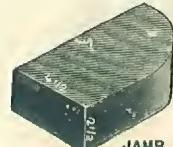
SIDE ARCH



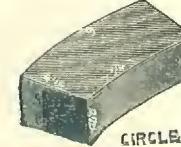
END ARCH



KEY



JAMB



CIRCLE

HINTS ON MAKING FINE PRESSED AND ORNAMENTAL BRICK.



PAY particular attention to the selection of clay. Grind it fine, and see that it is thoroughly tempered. That the clay should be of an even consistency throughout is the first consideration in making pressed brick. If struck out on a soft-mud machine, or by hand, use a fine sand of rich red color sifted through a very fine sieve. Foundry dust, obtainable in any iron foundry, can be used to an advantage where a sand of proper color cannot be obtained. If the bricks are made on a stiff-mud machine they can be re-pressed direct therefrom, but if made on a soft-mud machine must be allowed to partly dry before ready to press. Pressed brick, when laid in the wall, must be somewhat larger than common ones in order to allow for the smaller mortar joint used; hence, in order to contain a great amount of clay, and also to compensate for pressure, they should be molded or cut larger.

Dry soft mud bricks in a shed built for this purpose, so arranged that you have complete control of the air currents. They must dry evenly and be of uniform temper throughout. This is important. Press when they can just be indented with the finger by pressure. Before pressing, use a soft brush, or rub with the hands on the sides and ends of the brick to remove all foreign matter. After pressing, remove carefully from the press with pallets. At all times avoid finger marks. The Press Dies should be frequently dressed or re-lined, the Plungers packed out to fit snugly therein. Perfect bricks must not be expected from an imperfect or partly-worn Die. Lay upon their flat sides, one exactly above another, not over three or four high, until dry enough to handle without marking. When thoroughly dry, load onto spring barrows. Before setting them into the kiln, brush again with a soft brush to remove the dust. This also gives them a velvety and finished appearance. Place them in the kiln not only perfectly level, but plumb, with one face covering another. Great skill must be used in setting. After burning, wheel to the shed on spring barrows, with lath between the layers, and grade according to color. In shipping, pack in hay, and toss in pairs.

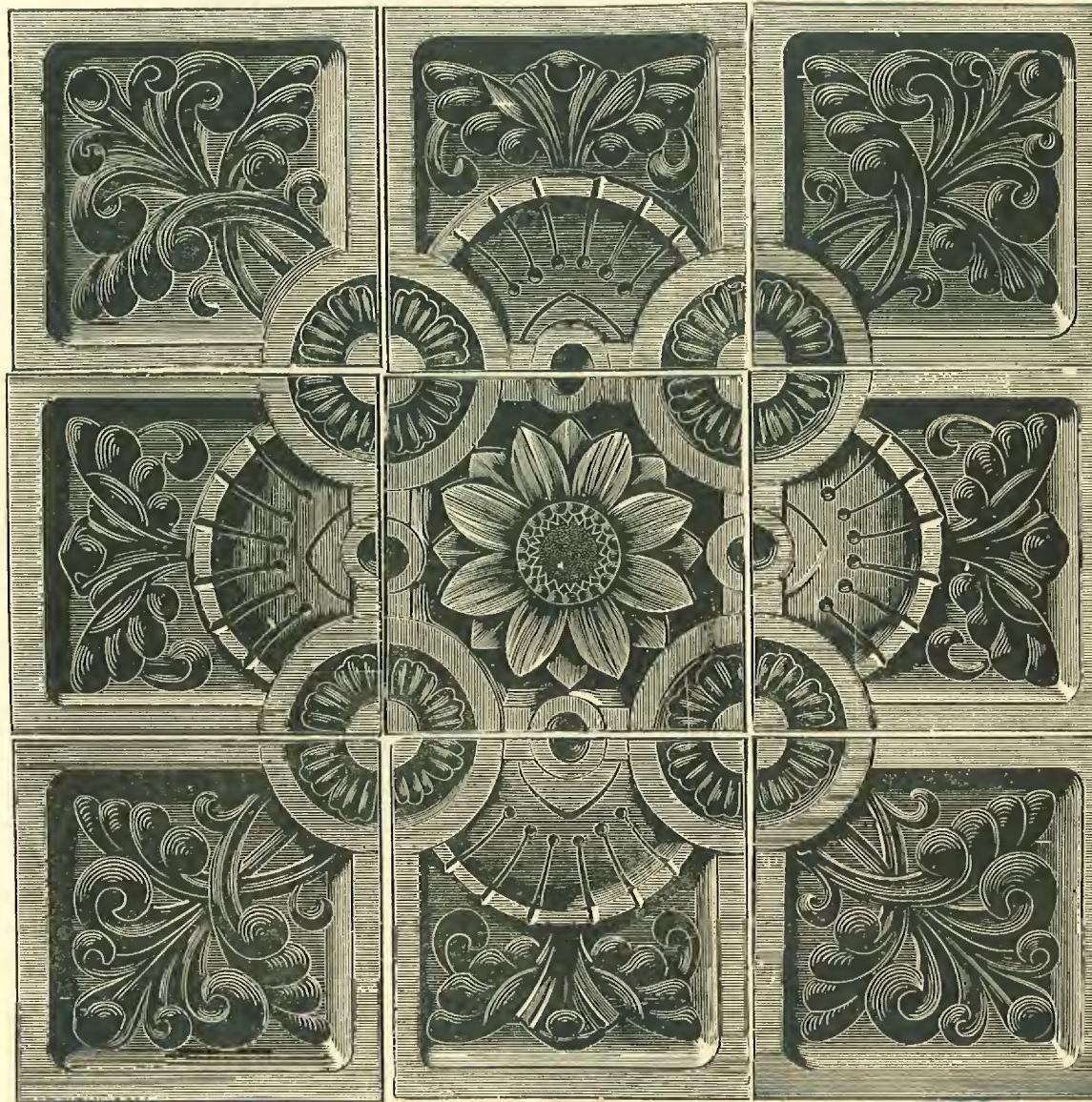


THE C. W. RAYMOND CO.
DAYTON, OHIO, U. S. A.

CLAY TESTING.

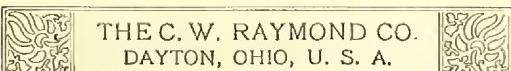
WE HAVE, at great expense, equipped a complete clay-testing department with all kinds of machinery necessary for making various products from clay, namely: pressed, paving, building, fire and ornamental brick, terra cotta, tile, clay shingles, etc. We have also an efficient corps of clay-working experts and engineers who are fully capable to do this work.

For testing clays we charge \$10.00 for each test, and it is necessary that five or six barrels of material be sent us. It should be marked carefully with the owner's name and address. Also careful shipping directions for the return of the product. Parties sending us clay for this purpose must at all times prepay freight charges. Should they afterwards purchase machinery from us, we will deduct the cost of all tests from the consideration of the order given.



Combination Panel Piece, 230-231-232, Class B.

ORNAMENTAL BRICK.



WE ASK your attention to the following pages, which contain illustrations of a series of Ornamental Bricks made upon our No. 3 Perfection Re-press, which we have arranged and classified in a convenient manner. In ordering Dies and Ornamental Plates, they should correspond in size with even courses of common bricks, including the regular allowance for mortar joints, and in all cases remember that the shrinkage of the clay must also be allowed for.

CLASS "A."

Embraces Mouldings, Panels, Center Pieces and special forms in decorated work made from any design submitted. The pieces shown work with three courses of common bricks. Will be made to order in other sizes when so desired.

CLASS "B."

Works with four courses of common bricks, 10x10 inches, burned. The same designs are made 7x7 inches or 5x5 inches. Will be made to order in other sizes when so desired.

CLASS "C."

Figure complete on two blocks. Works with four courses of common bricks. This design and those of Class "F" may be made upon the same Die.

CLASS "D."

Works with three courses of common bricks, $7\frac{1}{2} \times 7\frac{1}{2}$ inches, burned. The same designs are made 10x10 inches or 5x5 inches. Will be made to order in other sizes desired.

CLASS "E."

Works with two courses of common bricks, 5x5 inches, burned. The same designs are made 10x10 inches or $7\frac{1}{2} \times 7$ inches. Will be made to order in other sizes desired.

CLASS "F."

Works with two courses of common bricks, $8\frac{1}{2} \times 5$ inches, burned. Can be made on the same Die as Class "C."

CLASS "G."

Works with one course of common bricks. Made upon an Edge Die.

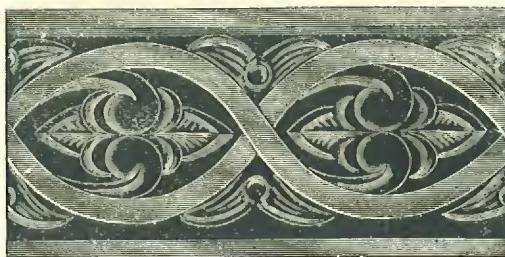
CLASS "H."

Molded Brick.—Molded bricks are made upon Dies corresponding to the shape of the bricks, or by the use of removable blocks or liners. Worked in a regular Square Press Die. Starters and Stops, Stretchers and Headers, Right and Left Returns made when ordered.

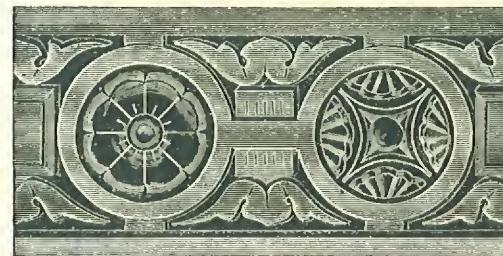
We also make all size Dies, Ornamental Plates, Liners, or Blocks for special-shape bricks from drawings submitted.

THE C. W. RAYMOND CO.
DAYTON, OHIO, U. S. A.

CLASS A.



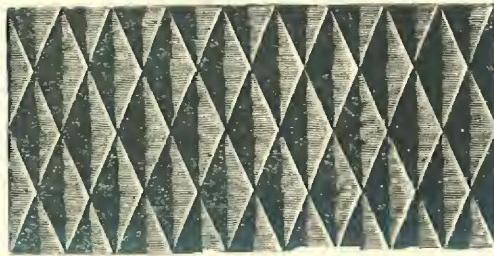
No. 125.



No. 126.



No. 127.

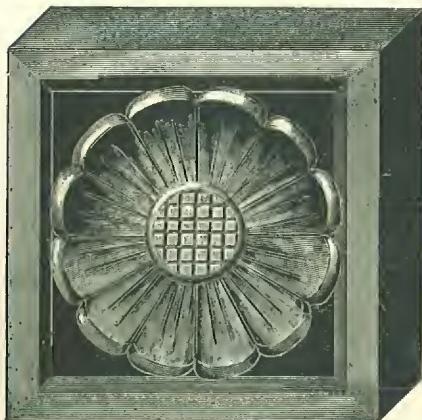


No. 128.

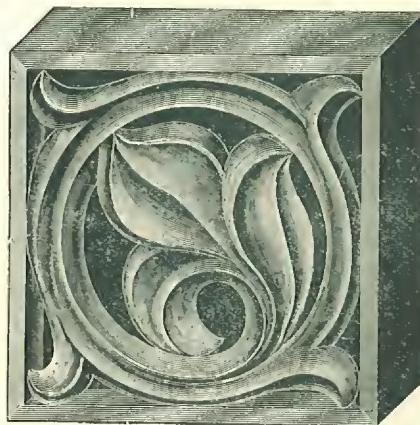


No. 129.

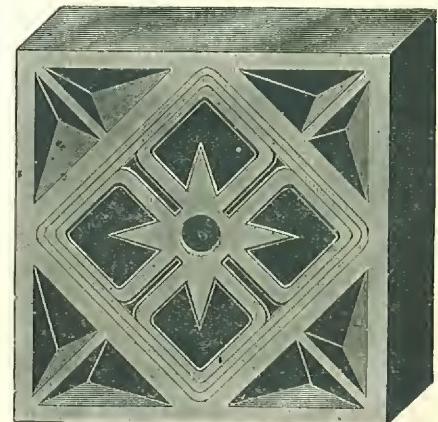
CLASS B.



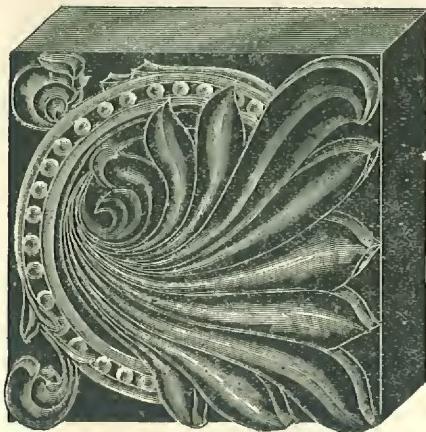
No. 219.



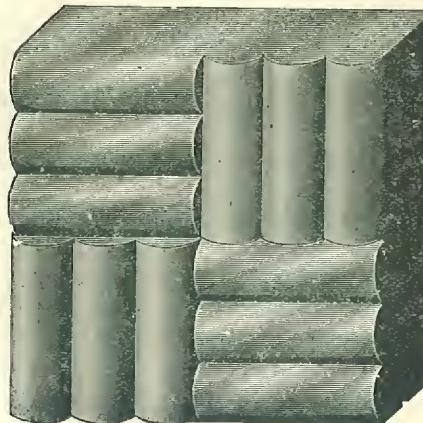
No. 220.



No. 221.

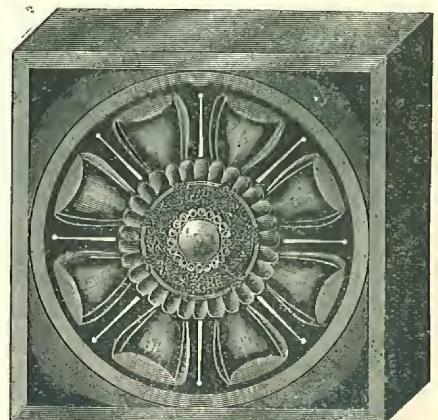


No. 222.

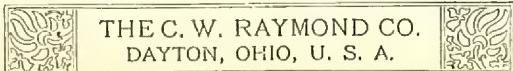
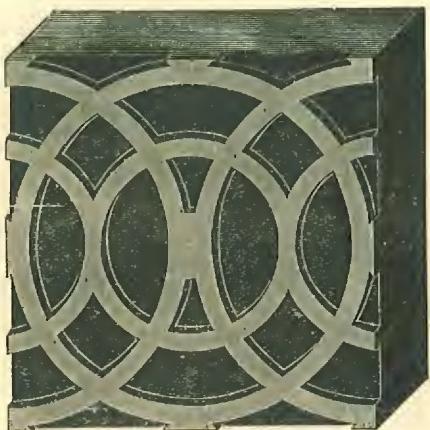


No. 223.

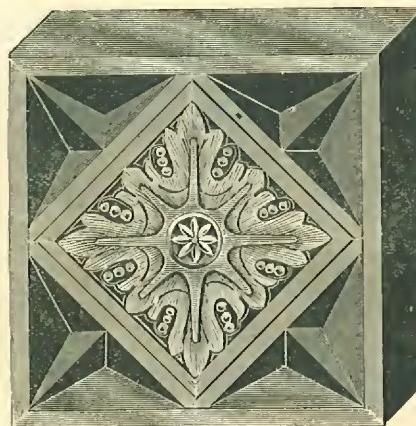
Combination of four pieces, made on same
die as Class E.



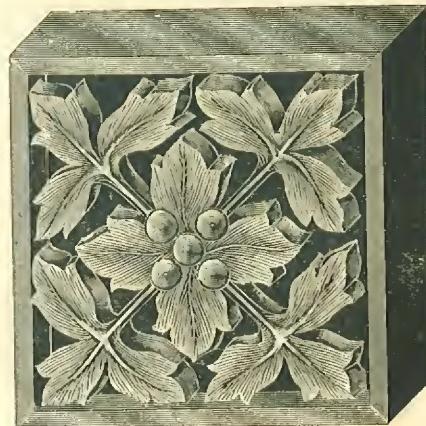
No. 224.

CLASS B—*Continued.*

No. 225.



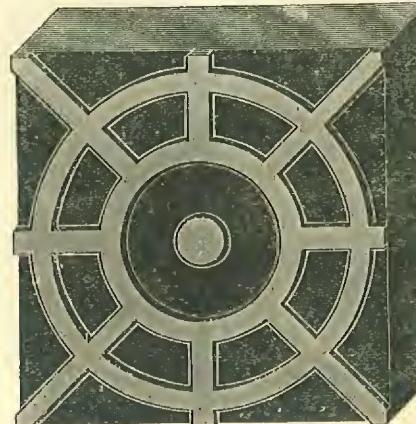
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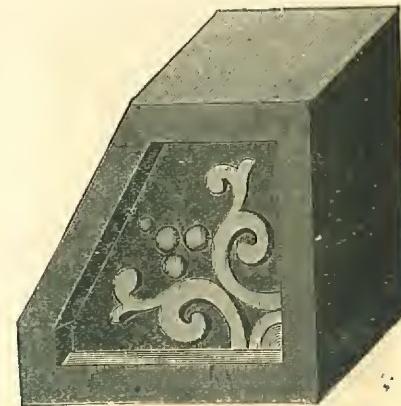
No. 227.



No. 228.



No. 229.



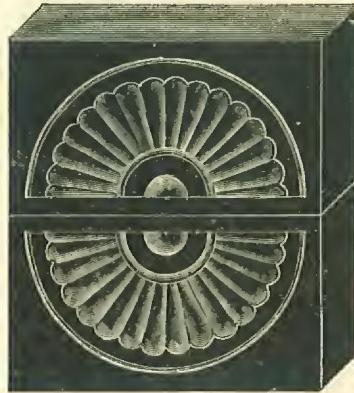
No. 250.



CLASS C.



No. 320.



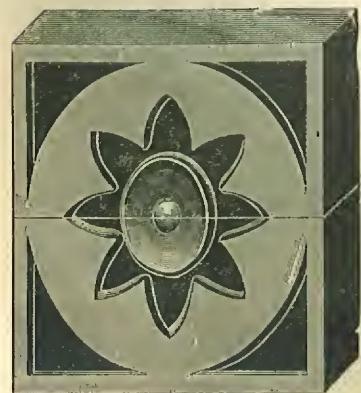
No. 321.



No. 322



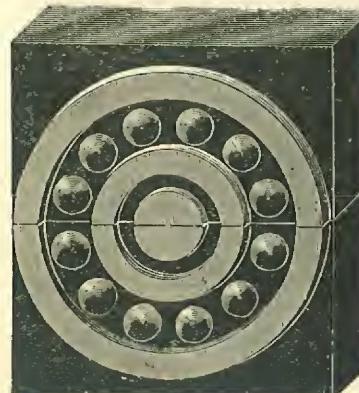
No. 323.



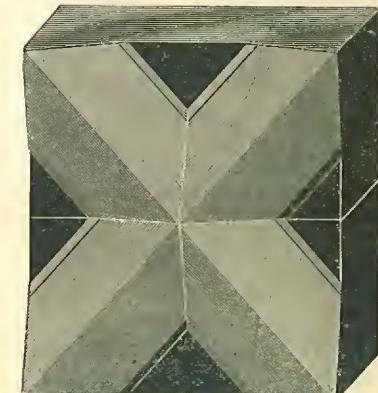
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No. 325.

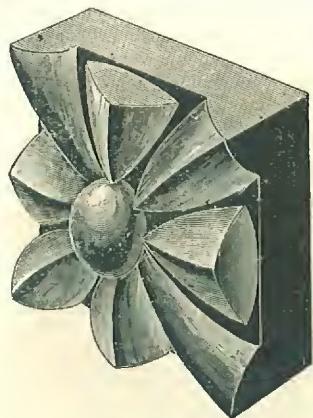


No. 326.



No. 327.

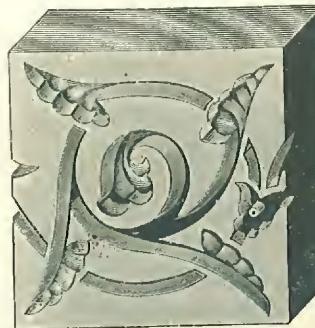
CLASS D.



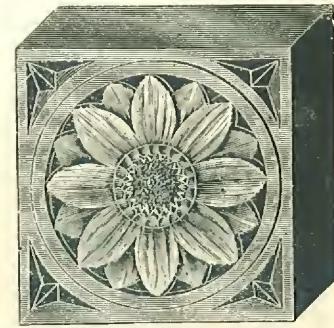
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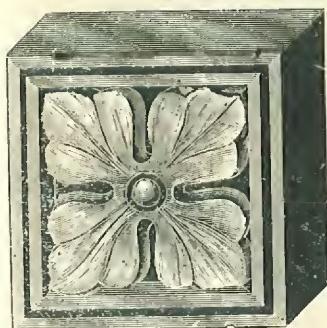
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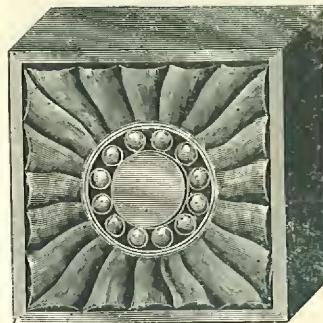
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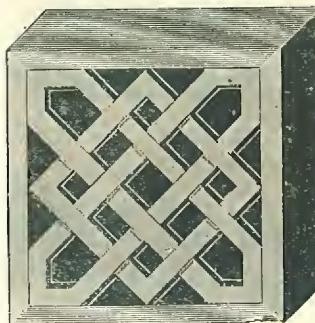
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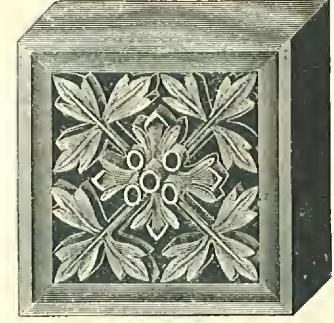
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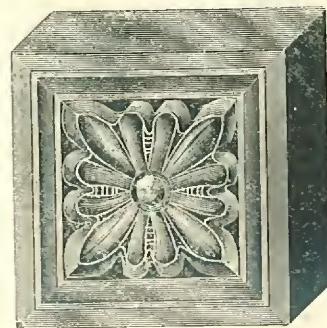
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No. 426.



No. 427.



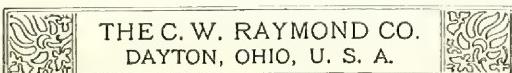
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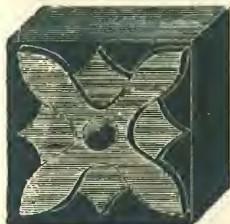
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No. 430.



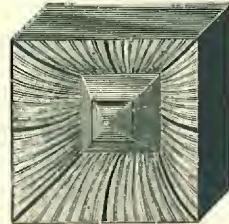
CLASS E.



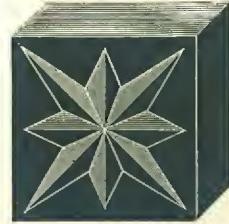
No. 540.



No. 541.



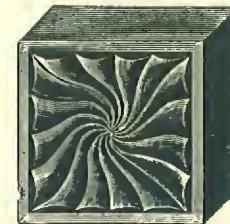
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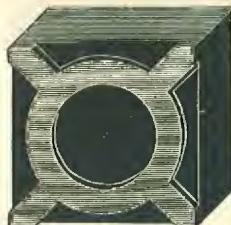
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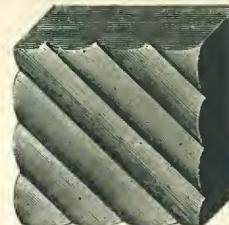
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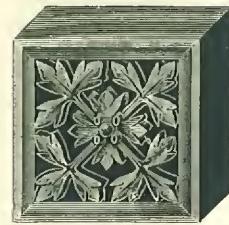
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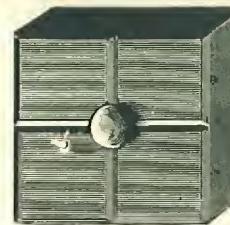
No. 546.



No. 547.



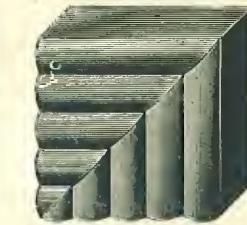
No. 548.



No. 549.

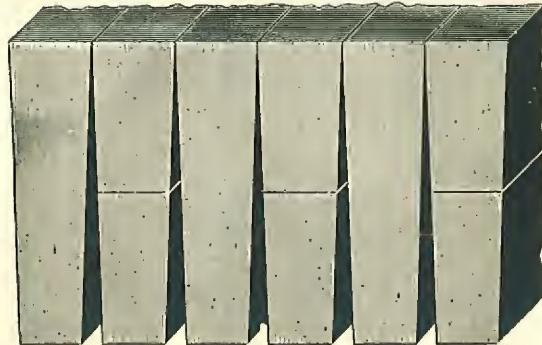


No. 550.



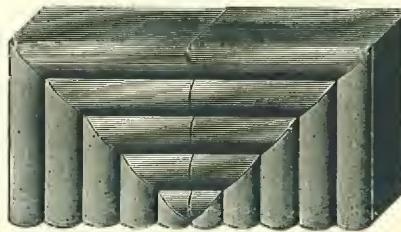
No. 575.

Shown in Combination No. 580



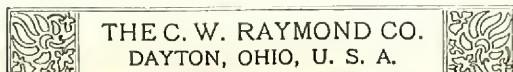
No. 1005.

Side and end arch, any radius, made upon standard die
by change of plungers only.

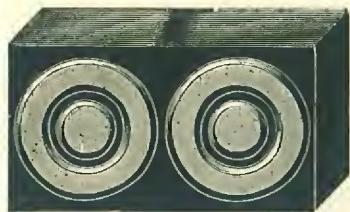


No. 580.

Combination of two or four pieces, made upon
same die as Class E, shown singly, No. 575



CLASS F.



No. 640.



No. 641.



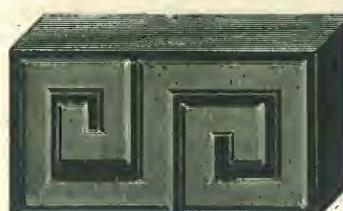
No. 642.



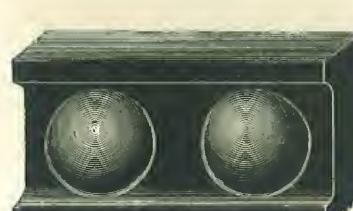
No. 643.



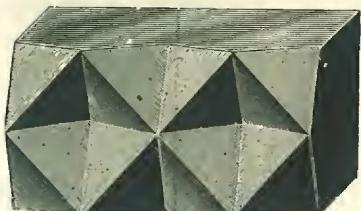
No. 644.



No. 645.



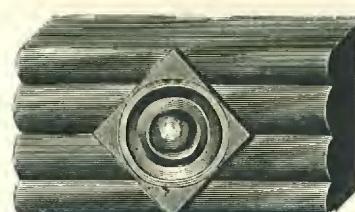
No. 646.



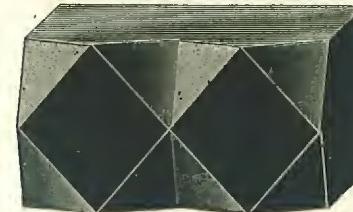
No. 647.



No. 648.

Shown in Combination of two blocks
Class C, No. 327.

No. 649.



No. 650.



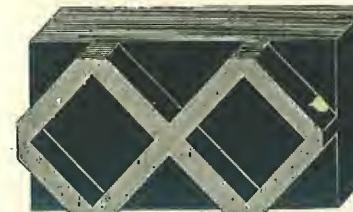
No. 651.

Shown in Combination of two blocks
Class C, No. 321.

No. 652.



No. 653.

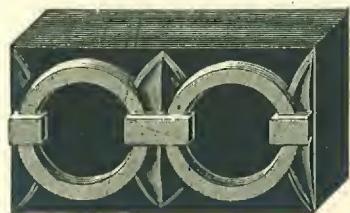


No. 654.

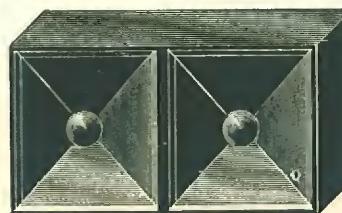


No. 655.

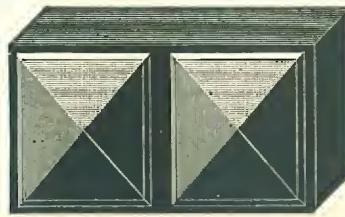
CLASS F—Continued.



No. 656.



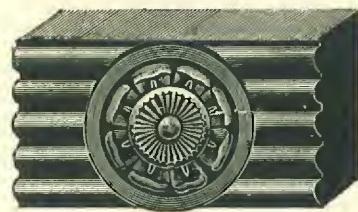
No. 657.



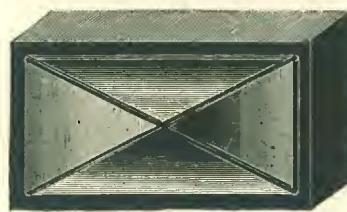
No. 658.



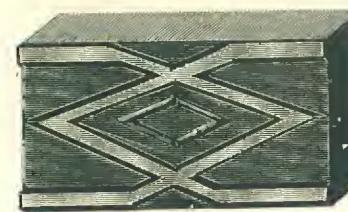
No. 659.



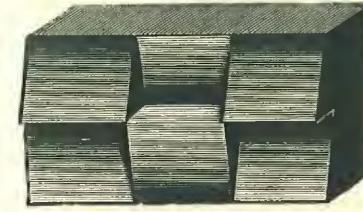
No. 660.



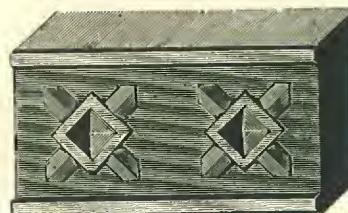
No. 661.



No. 662.



No. 663.



No. 664.



No. 665.



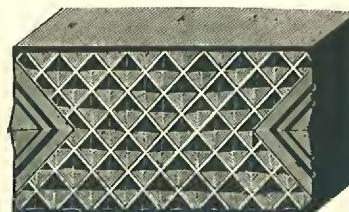
No. 666.



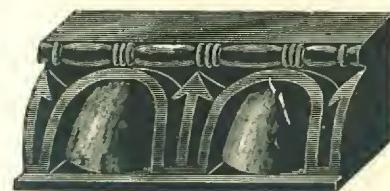
No. 667.



No. 668.

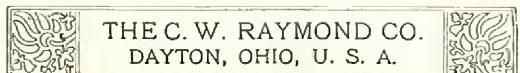


No. 669.



No. 1006.

(With right and left return.)



CLASS G.



No. 749.



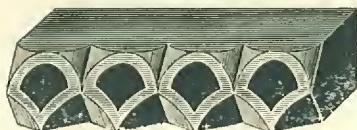
No. 750.



No. 751.



No. 752.



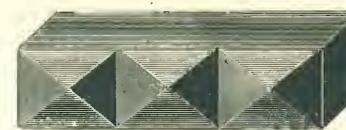
No. 753.



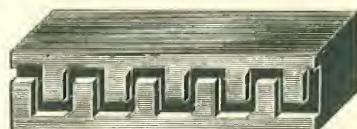
No. 754.



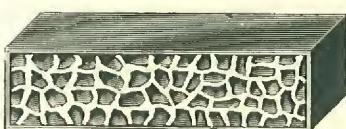
No. 755.



No. 756.



No. 757.



No. 758.



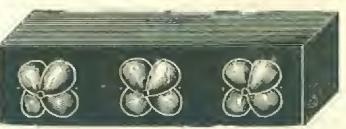
No. 759.



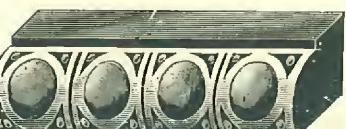
No. 760.



No. 761.



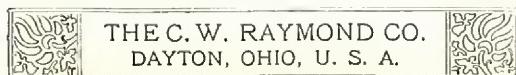
No. 762.



No. 763.



No. 764.



CLASS G—Continued.



No. 765.



No. 766.



No. 767.



No. 768.



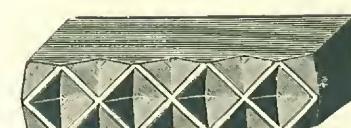
No. 769.



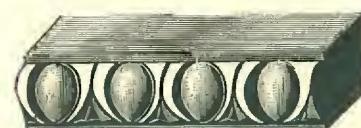
No. 770.
(Return for No. 755.)



No. 771.



No. 772.



No. 773.



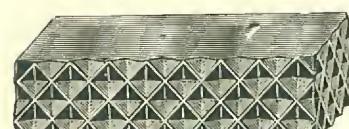
No. 774.



No. 775.
(Return for No. 771.)



No. 776.



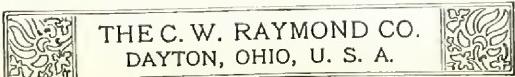
No. 777.
(Return for No. 765.)



No. 778.



No. 779.
(Return for No. 767.)



CLASS H.



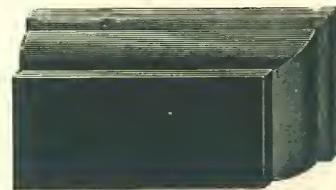
No. 827.



No. 828.



No. 829.
(Header, works with No. 831.)



No. 830.
(Return, works with No. 831.)



No. 831.
(Stretcher.)



No. 832.



No. 833.



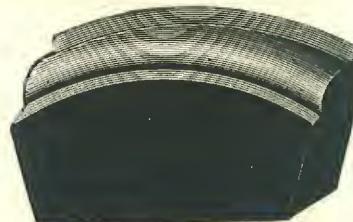
No. 834.



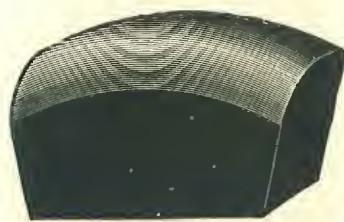
No. 835.



No. 836.



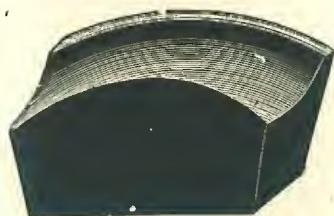
No. 837.



No. 838.



No. 839.



No. 840.



No. 841.



No. 842.



CLASS H—Continued.



No. 843.



No. 844.
(Starter for No. 859.)



No. 845.



No. 846.



No. 847.



No. 850.



No. 851.



No. 852.



No. 853.



No. 854.



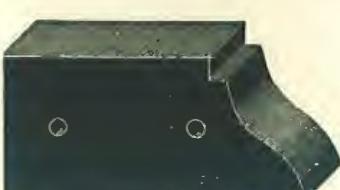
No. 855.



No. 856.



No. 857.



No. 858.



No. 859.



No. 860.



CLASS H—Continued.



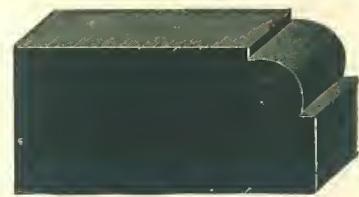
No. 861.



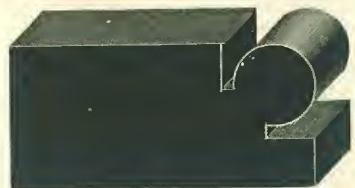
No. 862.



No. 863.
(Starter and Stop for No. 862.)



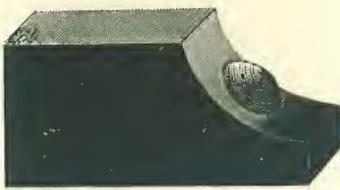
No. 864.



No. 865.



No. 866.



No. 867.



No. 868.



No. 869.



No. 870.



No. 871.



No. 872.
(Starter and Stop for No. 871.)



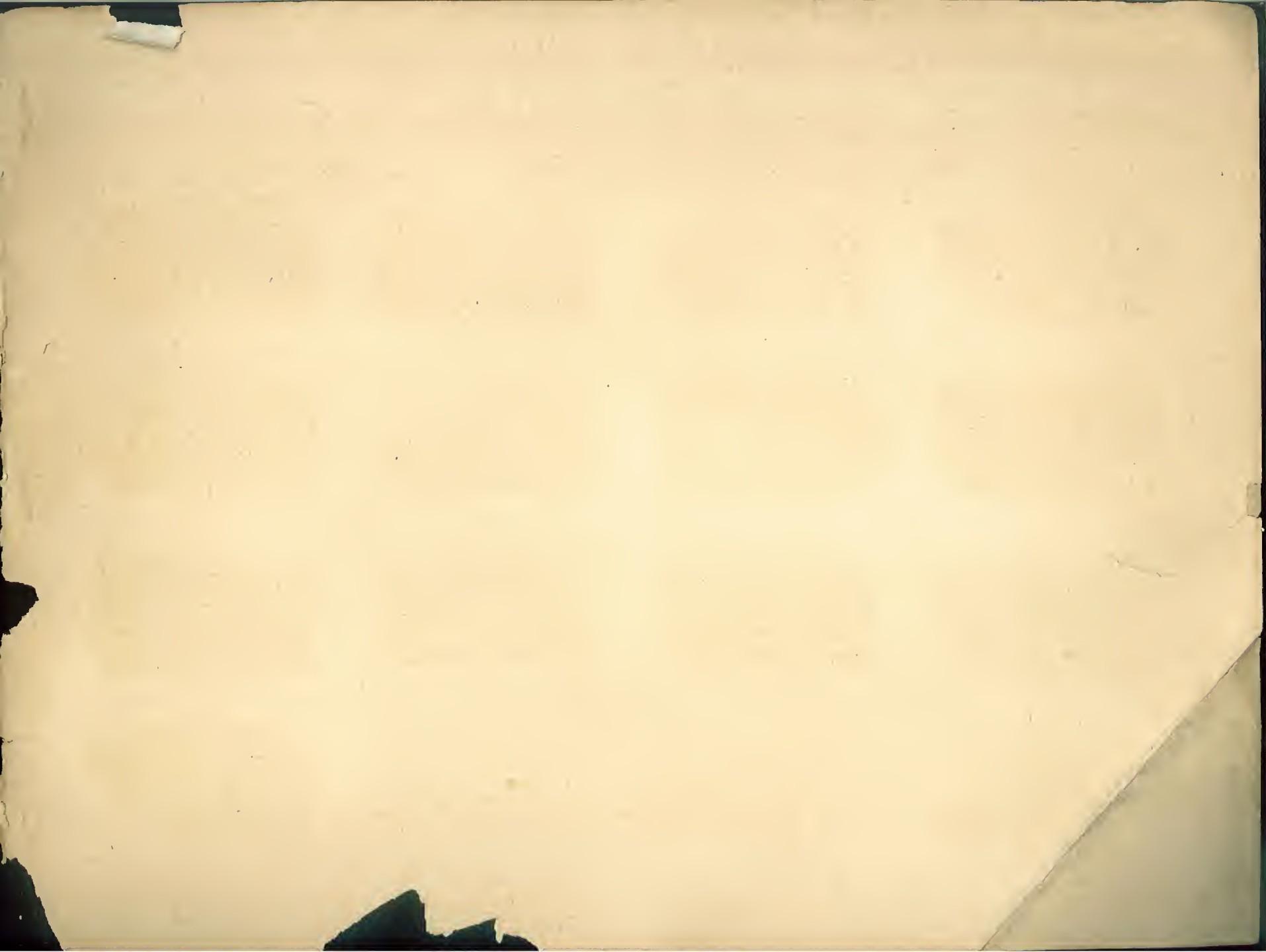
No. 873.

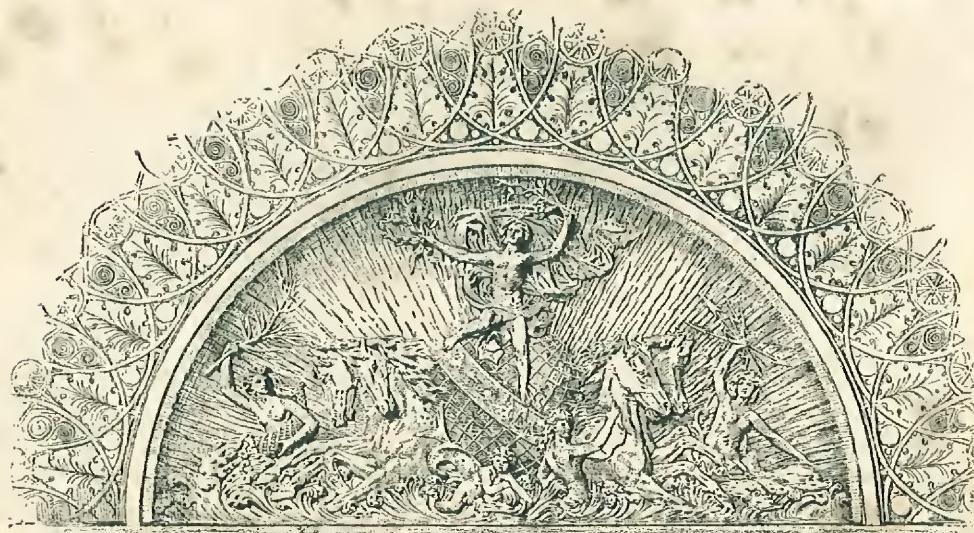
Comparative Sizes of Re-pressed and Common Brick.

The standard size (burned) of a good, hard common brick is $8\frac{1}{4} \times 4 \times 2\frac{1}{4}$, and that of a re-pressed front brick $8\frac{3}{8} \times 4 \times 2\frac{3}{8}$.

NATIONAL BRICK MANUFACTURERS' ASSOCIATION,
Philadelphia, 1889.







THE C. W. RAYMOND CO.
DAYTON, OHIO, U. S. A.